

# San Jose Federated City Employees' Retirement System

Third Quarter 2019

Private Markets Program  
**PUBLIC**

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## Table of Contents

1. Private Debt Program
2. Real Estate Program
3. Real Assets Program

### Snapshot

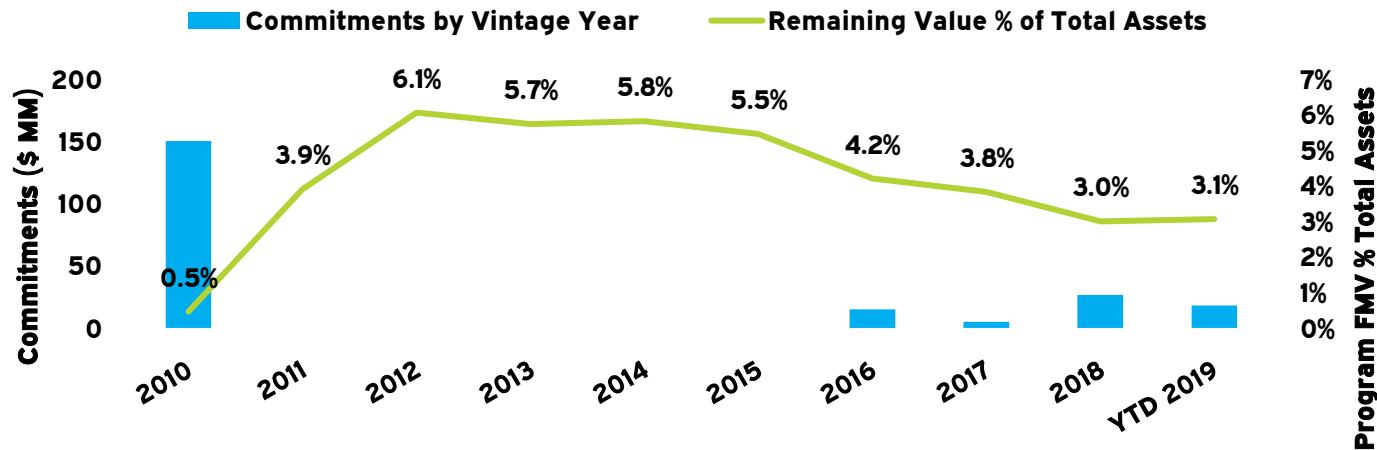
#### By Account

Account Type	Inception Year	Committed (\$ MM)	Contributed (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	IRR (%)
Legacy Private Equity	2004	174.3	152.3	184.9	40.6	1.48	7.5
NB Fund of One	2017	261.5	78.9	2.3	85.4	1.11	13.8
Private Debt	2010	214.6	212.9	177.6	65.1	1.14	4.4
Real Estate	2005	194.2	155.1	140.9	55.2	1.26	5.9
Real Assets	2016	35.2	23.2	2.3	23.4	1.11	6.8
<b>Total</b>		<b>879.8</b>	<b>622.4</b>	<b>508.0</b>	<b>269.6</b>	<b>1.25</b>	<b>6.4</b>

## **Private Debt Program**

### Introduction

As of September 30, 2019, the San Jose Federated City Employees' Retirement System had committed \$214.6 million to six private debt partnerships and two co-investments. The reported fair value of the aggregate Private Debt Program was \$65.1 million at September 30, 2019, which equates to 3.1% of the overall Retirement System, versus a 4.0% policy target.



### Program Status

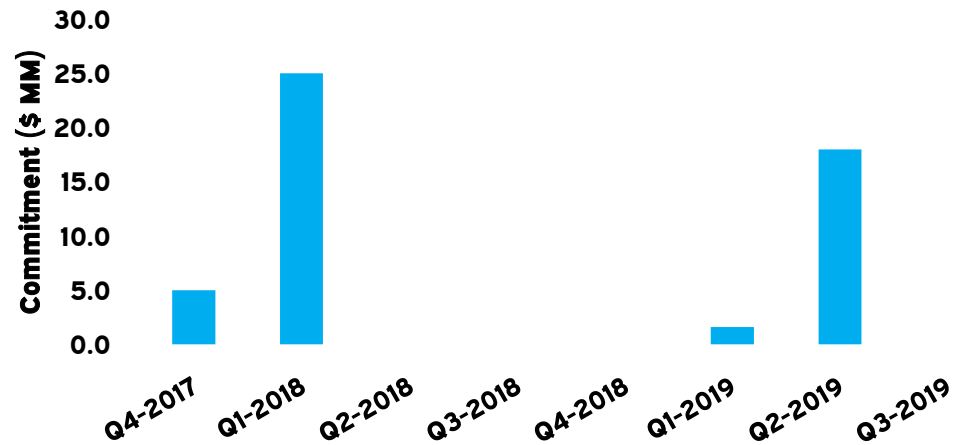
No. of Investments	8
Committed (\$ MM)	214.6
Contributed (\$ MM)	212.9
Distributed (\$ MM)	177.6
Remaining Value (\$ MM)	65.1

### Program Performance Since Inception

DPI	0.83x
TVPI	1.14x
IRR	4.4%

### Commitments

Recent Quarterly Commitments



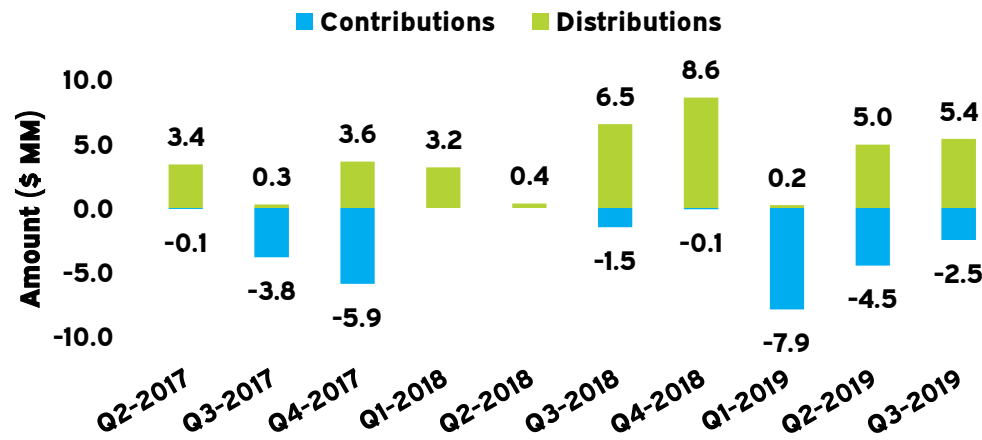
Commitments This Quarter

Fund	Strategy	Region	Amount (MM)
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None to report.

### Cash Flows

#### Recent Quarterly Cash Flows



#### Largest Contributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
Octagon CLO III	2018	Private Debt	North America	2.50

#### Largest Distributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
ArrowMark Sep Acct	2017	Private Debt	Western Europe	5.16
Octagon CLO III	2018	Private Debt	North America	0.24

### Significant Events

- During the third quarter, ArrowMark Partners Separate Account distributed \$5.16 million to the Retirement System as the underlying security was called by the issuer in September 2019. Subsequent to quarter-end, in October 2019, the remaining \$0.13 million held in the separate account was distributed to the Retirement System.
- White Oak Direct Lending generated a \$3.1 million (or 27.6%) net change.
- Octagon CLO Opportunity Fund III, L.P. ("Octagon CLO III") called \$2.5 million from the Retirement System.
- During the quarter, the net value of Medley Opportunity Fund II, L.P. declined by \$1.4 million (or 6.3%).
- The net value of GSO SJ Partners declined by \$0.7 million (or 8.1%).



### By Strategy

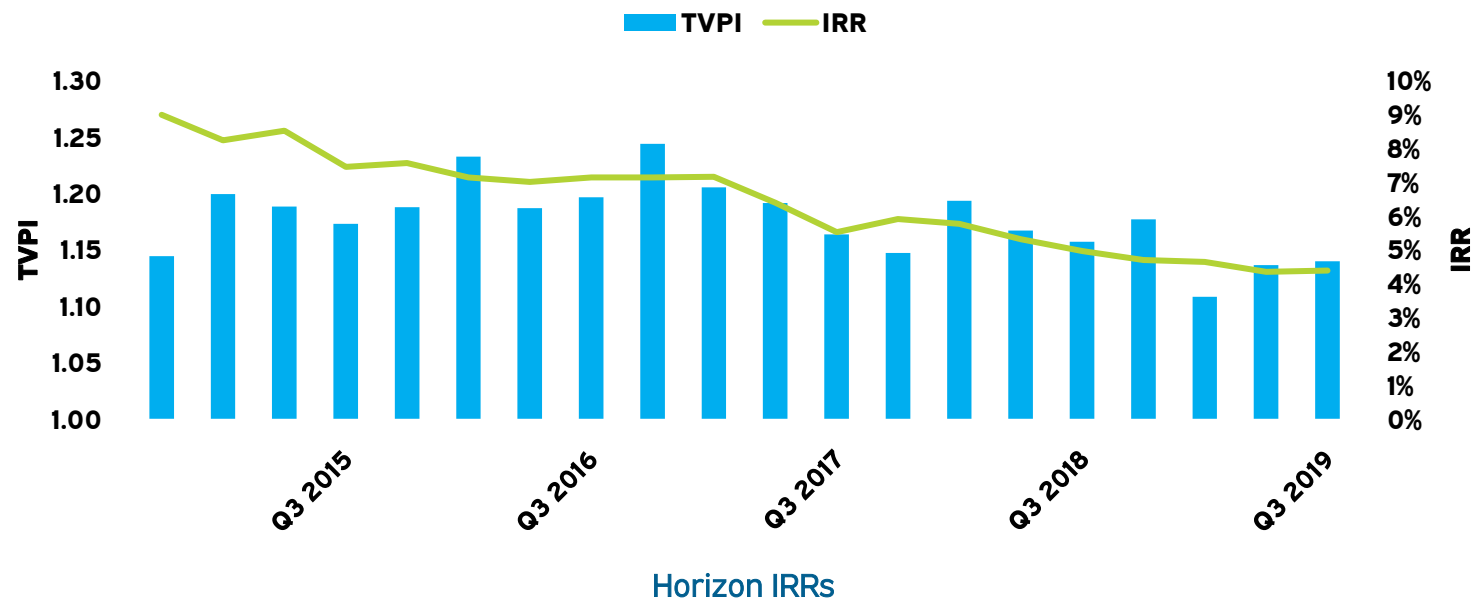
Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
Private Debt	8	214.6	212.9	34.9	177.6	65.1	100.1	0.83	1.14	4.4
<b>Total</b>	<b>8</b>	<b>214.6</b>	<b>212.9</b>	<b>34.9</b>	<b>177.6</b>	<b>65.1</b>	<b>100.1</b>	<b>0.83</b>	<b>1.14</b>	<b>4.4</b>

### By Vintage

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)	BM TVPI <sup>1</sup> (X)	BM IRR <sup>1</sup> (%)
2010	3	150.0	182.9	0.0	167.6	41.8	41.8	0.92	1.14	4.2	1.36	11.1
2016	1	15.0	12.0	3.4	3.7	10.3	13.6	0.31	1.17	8.1	1.11	6.9
2017	1	5.0	5.0	0.0	6.0	0.1	0.1	1.20	1.22	12.9	1.09	9.0
2018	2	26.6	10.3	16.3	0.3	10.3	26.6	0.03	1.03	NM	NM	NM
2019	1	18.0	2.7	15.3	0.0	2.7	18.0	0.00	0.99	NM	NM	NM
<b>Total</b>	<b>8</b>	<b>214.6</b>	<b>212.9</b>	<b>34.9</b>	<b>177.6</b>	<b>65.1</b>	<b>100.1</b>	<b>0.83</b>	<b>1.14</b>	<b>4.4</b>		

<sup>1</sup> Benchmark is drawn from Cambridge Associates | Credit Opportunities, Median.

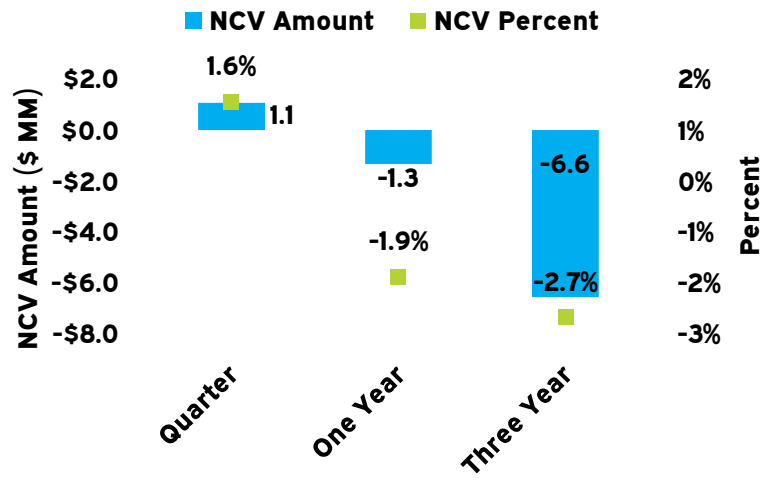
#### Since Inception Performance Over Time



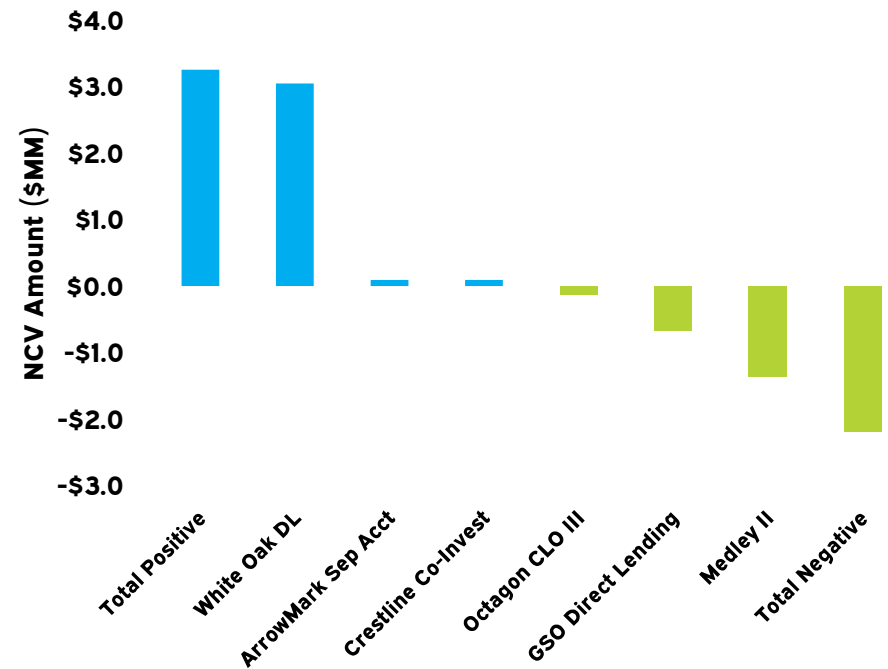
#### Horizon IRRs

Private Debt Program	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
	-2.0	-2.9	0.5	NA	4.4

#### Periodic NCV



#### 1 Quarter Drivers Of NCV



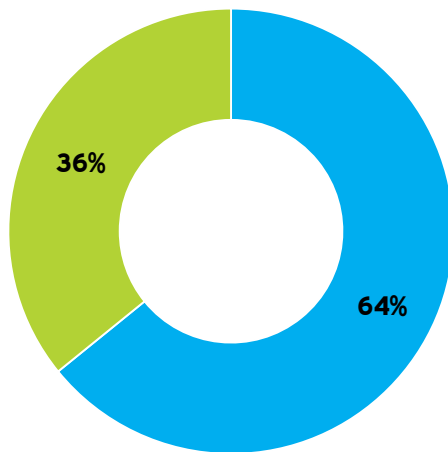
### Fund Performance: Sorted By Vintage And Strategy

By Investment	Vintage	Strategy	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	IRR (%)	BM TVPI <sup>1</sup> (X)	BM IRR <sup>1</sup> (%)
GSO Direct Lending	2010	Private Debt	50.0	42.9	0.0	45.0	7.6	1.23	6.8	1.36	11.1
Medley II	2010	Private Debt	50.0	51.7	1.7	41.0	20.0	1.18	3.5	1.36	11.1
White Oak DL	2010	Private Debt	50.0	88.3	0.0	81.6	14.1	1.08	3.3	1.36	11.1
Cross Ocean ESS II	2016	Private Debt	15.0	12.0	3.4	3.7	10.3	1.17	8.1	1.11	6.9
ArrowMark Sep Acct	2017	Private Debt	5.0	5.0	0.0	6.0	0.1	1.22	12.9	1.09	9.0
Crestline Co-Invest	2018	Private Debt	1.6	1.6	0.0	0.0	1.7	1.08	NM	NM	NM
Octagon CLO III	2018	Private Debt	25.0	8.8	16.3	0.3	8.6	1.02	NM	NM	NM
Cross Ocean ESS III	2019	Private Debt	18.0	2.7	15.3	0.0	2.7	0.99	NM	NM	NM
<b>Total</b>			<b>214.6</b>	<b>212.9</b>	<b>34.9</b>	<b>177.6</b>	<b>65.1</b>	<b>1.14</b>	<b>4.4</b>		

<sup>1</sup> Benchmark is drawn from Cambridge Associates | Credit Opportunities, Median.

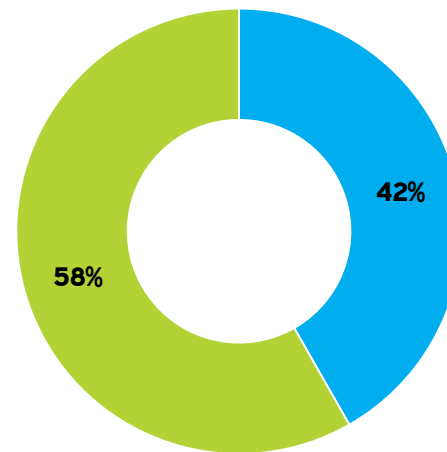
#### By Strategy

Percent of FMV



■ Direct Lending  
■ Opportunistic

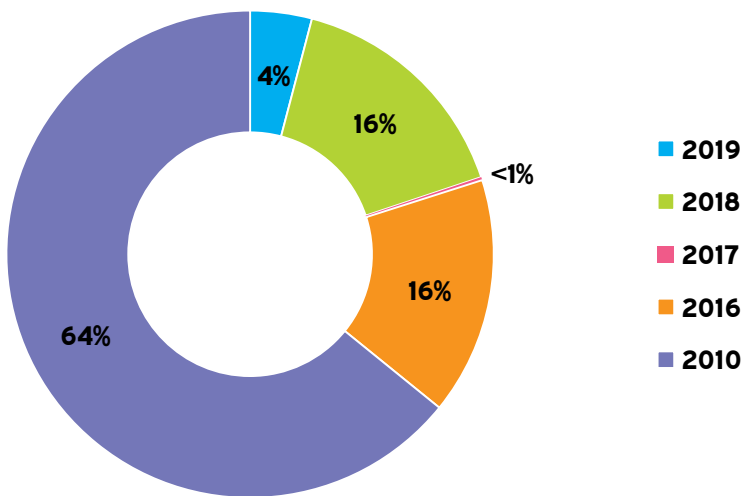
Percent of Exposure



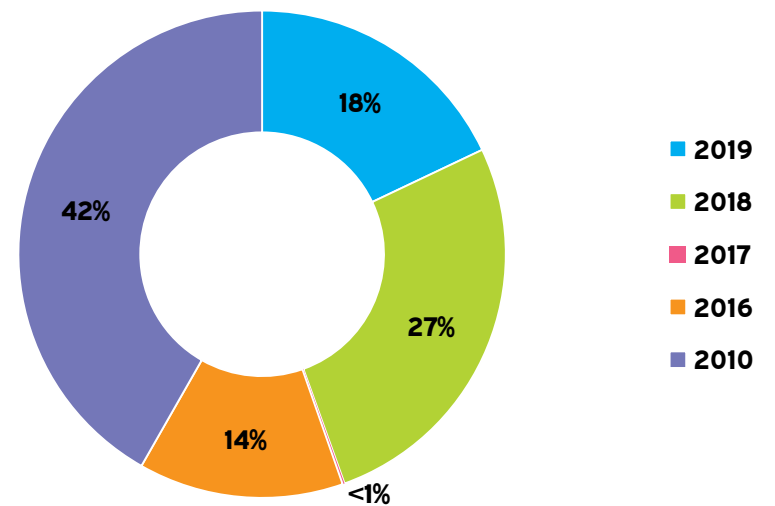
■ Direct Lending  
■ Opportunistic

#### By Vintage

Percent of FMV

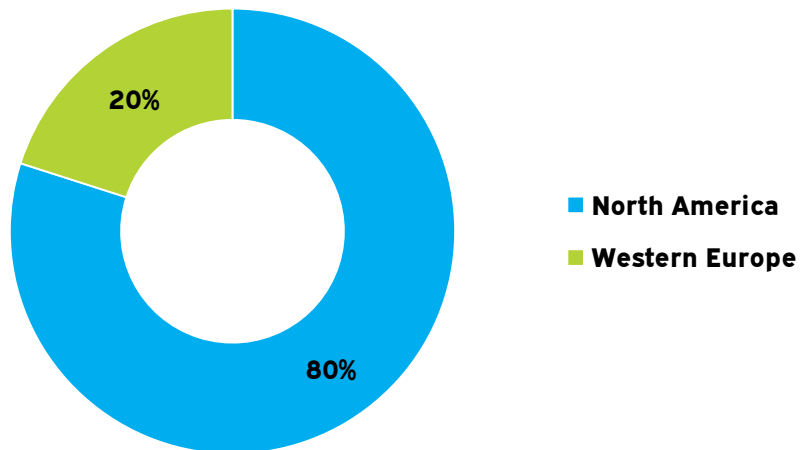


Percent of Exposure

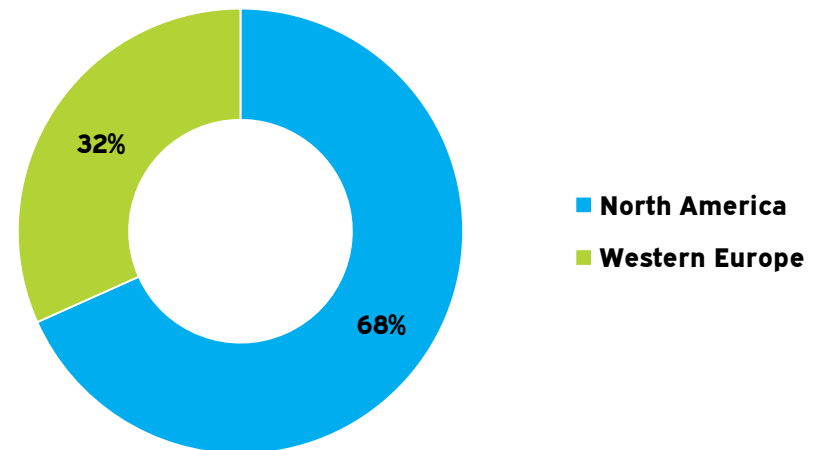


#### By Geographic Focus

Percent of FMV



Percent of Exposure

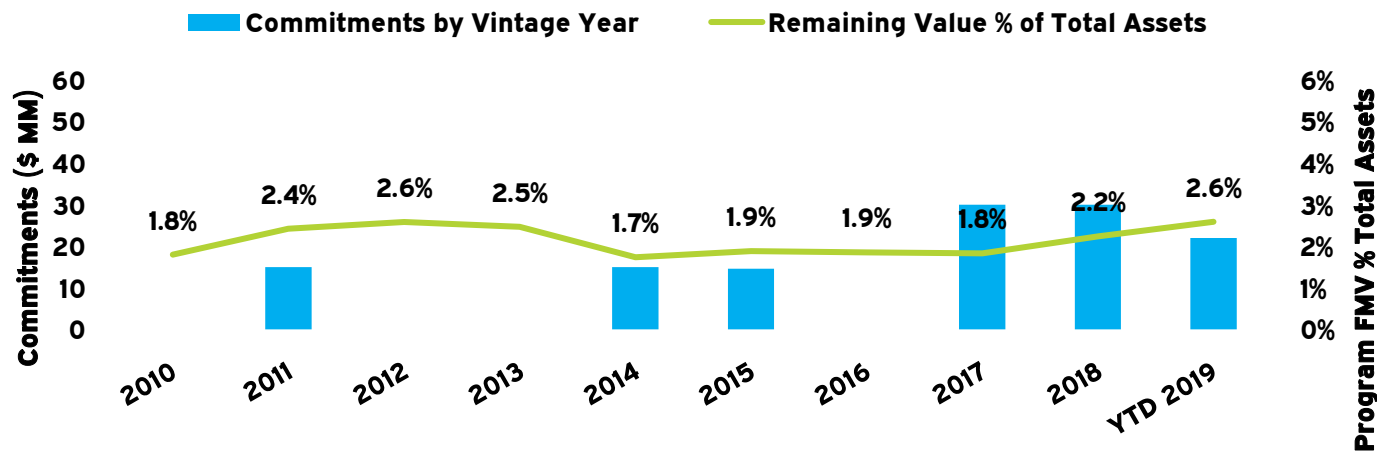


## **Real Estate Program**



### Introduction

As of September 30, 2019, the Retirement System had committed a total of \$194.2 million to 12 closed-end real estate funds. The Real Estate Program's reported fair value of real estate investments was \$55.2 million at September 30, 2019, which equates to 2.6% of the overall Retirement System, versus a 3.0% policy target.



### Program Status

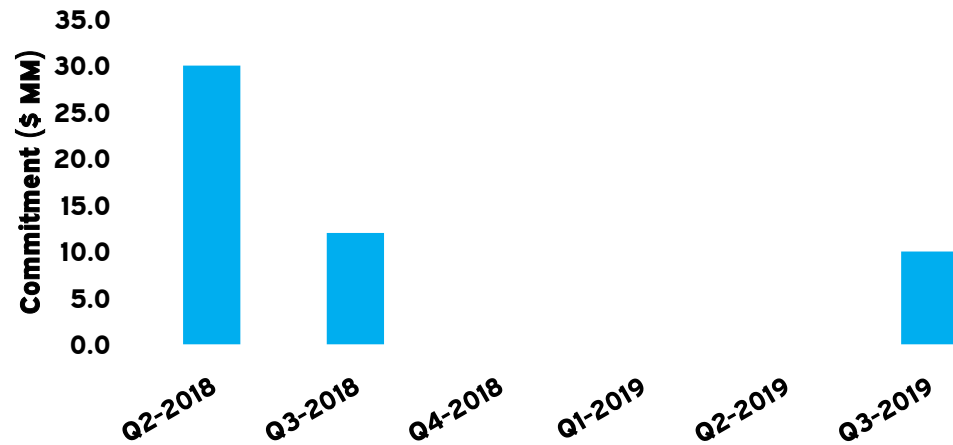
No. of Investments	12
Committed (\$ MM)	194.2
Contributed (\$ MM)	155.1
Distributed (\$ MM)	140.9
Remaining Value (\$ MM)	55.2

### Program Performance Since Inception

DPI	0.91x
TVPI	1.26x
IRR	5.9%

### Commitments

Recent Quarterly Commitments

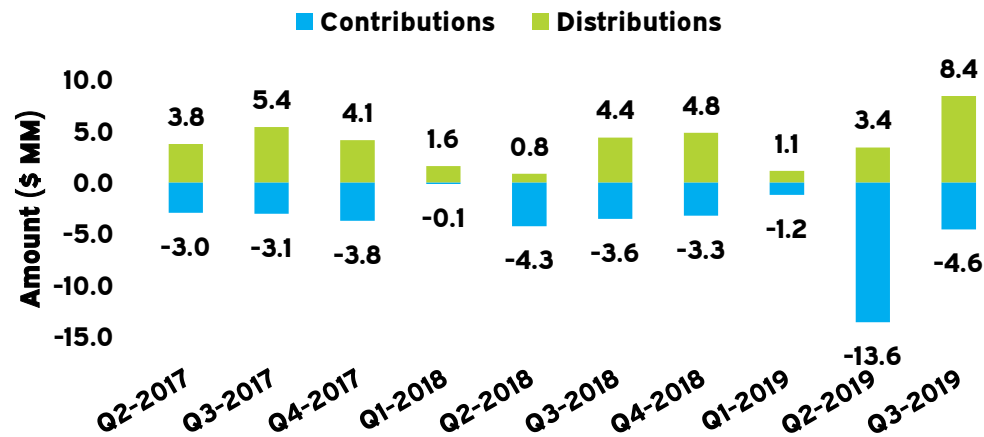


Commitments This Quarter

Fund	Strategy	Region	Amount (MM)
DRA X	Value-Added	North America	10.00

### Cash Flows

#### Recent Quarterly Cash Flows



#### Largest Contributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
DRA IX	2017	Value-Added	North America	2.18
EPISO 4	2015	Value-Added	Western Europe	1.09
GEM VI	2017	Opportunistic	North America	1.00

#### Largest Distributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
DRA VII	2011	Value-Added	North America	4.54
Torchlight VI	2018	Debt	North America	2.36
DRA VIII	2014	Value-Added	North America	0.84

### Significant Events

- During the third quarter, DRA Growth and Income Fund VII, LLC distributed \$4.54 million to the Retirement System.
- Torchlight Debt Opportunity Fund VI, L.P. ("Torchlight VI") distributed \$2.36 million to the Retirement System.
- DRA Growth and Income Fund IX, LLC called \$2.18 million from the Retirement System.

### By Strategy

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
Debt	1	30.0	9.8	22.6	3.0	7.0	29.6	0.31	1.02	NM
Opportunistic	1	10.0	2.5	7.6	0.6	1.7	9.3	0.24	0.96	NM
Value-Added	10	154.2	142.8	27.0	137.3	46.5	73.4	0.96	1.29	6.0
<b>Total</b>	<b>12</b>	<b>194.2</b>	<b>155.1</b>	<b>57.1</b>	<b>140.9</b>	<b>55.2</b>	<b>112.3</b>	<b>0.91</b>	<b>1.26</b>	<b>5.9</b>

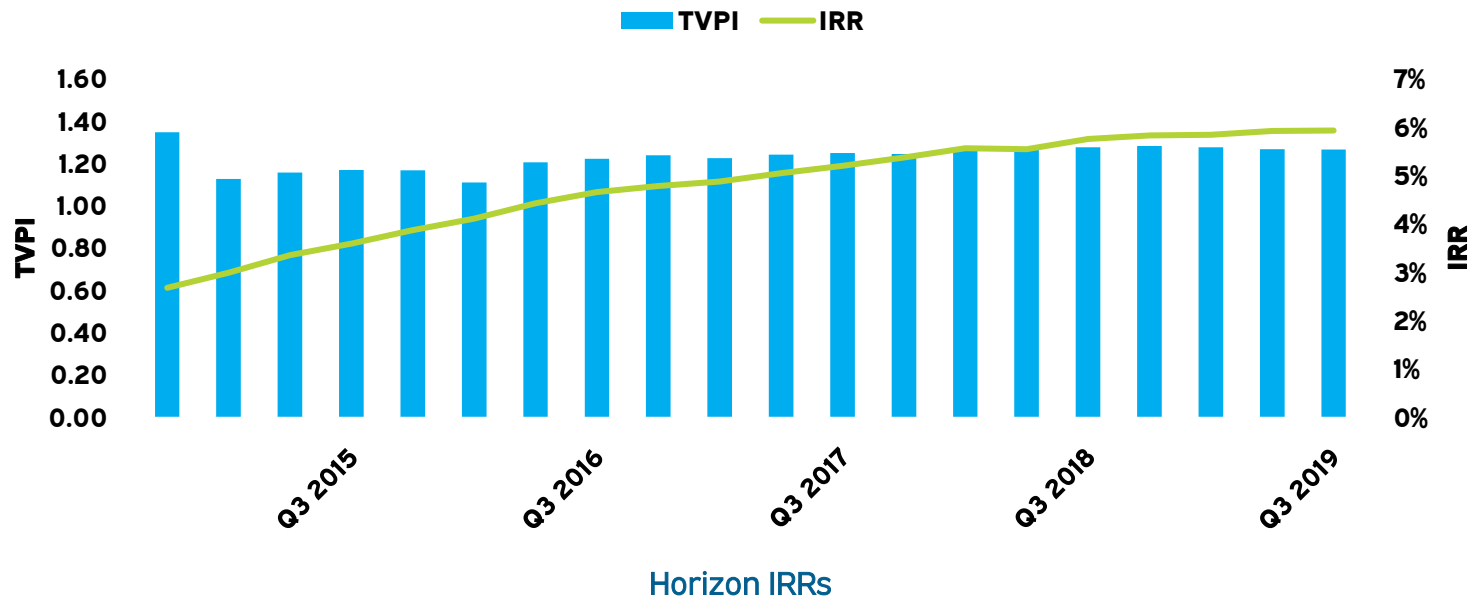
### By Vintage

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)	BM TVPI <sup>1</sup> (X)	BM IRR <sup>1</sup> (%)
2005	1	20.0	30.5	0.0	40.3	0.0	0.0	1.32	1.32	5.3	1.01	0.3
2006	1	20.0	18.2	0.0	8.8	0.0	0.0	0.48	0.48	-10.9	1.01	0.2
2007	2	27.6	28.4	0.0	40.6	0.7	0.7	1.43	1.45	8.9	1.19	3.2
2011	1	15.0	16.3	0.0	30.4	4.1	4.1	1.87	2.11	20.9	1.47	12.4
2014	1	15.0	17.9	0.1	11.9	11.2	11.3	0.66	1.29	10.7	1.34	11.6
2015	1	14.6	12.0	2.6	1.0	12.8	15.4	0.08	1.15	8.3	1.29	11.2
2017	2	30.0	21.6	10.1	4.9	19.4	29.5	0.22	1.12	12.6	1.08	8.8
2018	1	30.0	9.8	22.6	3.0	7.0	29.6	0.31	1.02	NM	NM	NM

<sup>1</sup> Benchmark is drawn from Cambridge Associates | Real Estate, Median.

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)	BM TVPI' (X)	BM IRR' (%)
2019	2	22.0	0.3	21.7	0.0	0.1	21.8	0.00	0.41	NM	NM	NM
<b>Total</b>	<b>12</b>	<b>194.2</b>	<b>155.1</b>	<b>57.1</b>	<b>140.9</b>	<b>55.2</b>	<b>112.3</b>	<b>0.91</b>	<b>1.26</b>	<b>5.9</b>		

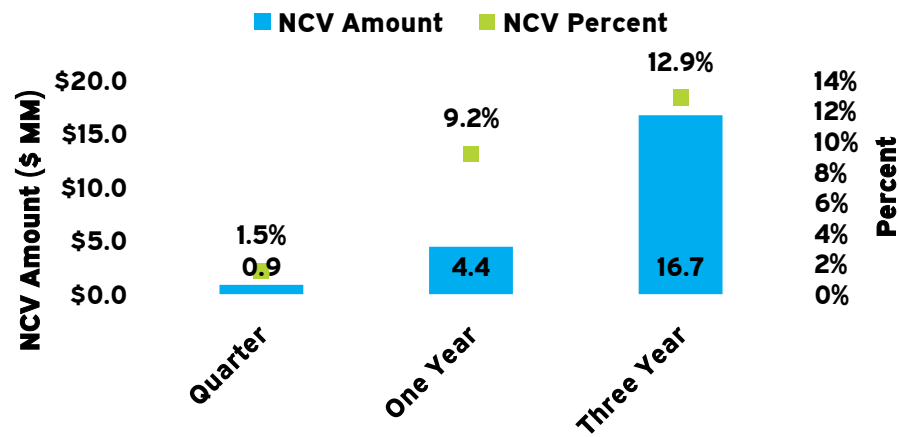
#### Since Inception Performance Over Time



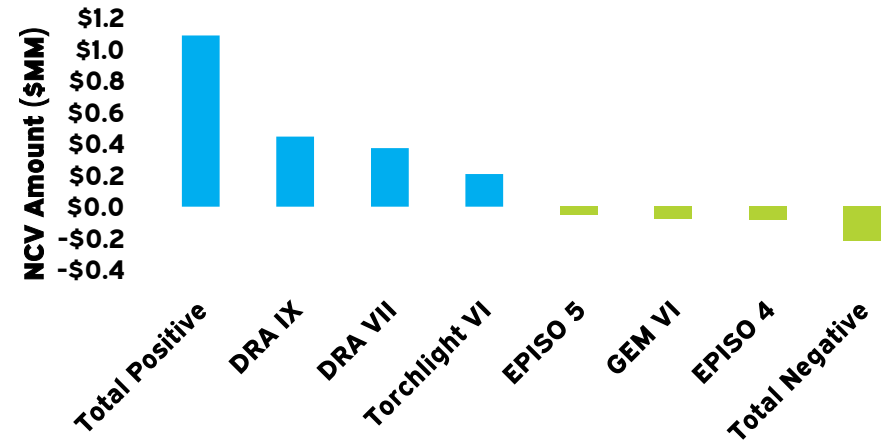
#### Horizon IRRs

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Real Estate Program	9.5	14.1	16.8	9.2	5.9

Periodic NCV



1 Quarter Drivers Of NCV





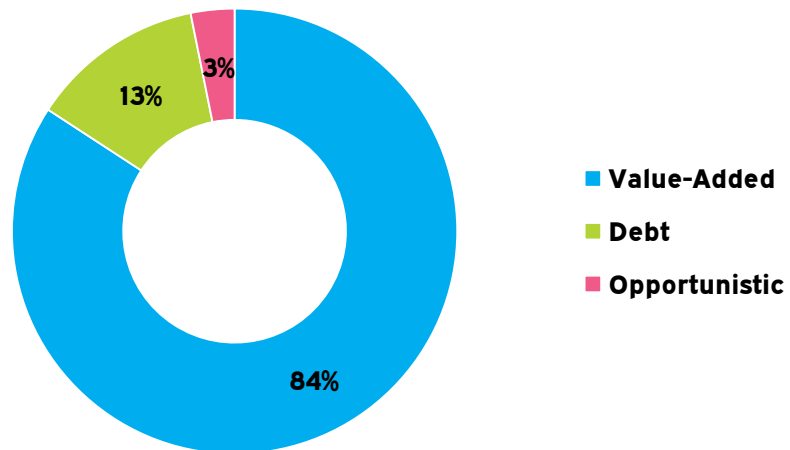
### Fund Performance: Sorted By Vintage And Strategy

By Investment	Vintage	Strategy	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	IRR (%)	BM TVPI <sup>1</sup> (X)	BM IRR <sup>1</sup> (%)
DRA V	2005	Value-Added	20.0	30.5	0.0	40.3	0.0	1.32	5.3	1.01	0.3
GEAM Value Add	2006	Value-Added	20.0	18.2	0.0	8.8	0.0	0.48	-10.9	1.01	0.2
DRA VI	2007	Value-Added	9.7	10.6	0.0	17.0	0.7	1.67	10.7	1.19	3.2
Fidelity RE III	2007	Value-Added	17.9	17.9	0.0	23.7	0.0	1.33	7.3	1.19	3.2
DRA VII	2011	Value-Added	15.0	16.3	0.0	30.4	4.1	2.11	20.9	1.47	12.4
DRA VIII	2014	Value-Added	15.0	17.9	0.1	11.9	11.2	1.29	10.7	1.34	11.6
EPISO 4	2015	Value-Added	14.6	12.0	2.6	1.0	12.8	1.15	8.3	1.29	11.2
GEM VI	2017	Opportunistic	10.0	2.5	7.6	0.6	1.7	0.96	NM	NM	NM
DRA IX	2017	Value-Added	20.0	19.2	2.6	4.3	17.6	1.14	13.9	1.08	8.8
Torchlight VI	2018	Debt	30.0	9.8	22.6	3.0	7.0	1.02	NM	NM	NM
DRA X	2019	Value-Added	10.0	0.0	10.0	0.0	0.0	NM	NM	NM	NM
EPISO 5	2019	Value-Added	12.0	0.3	11.7	0.0	0.1	0.41	NM	NM	NM
<b>Total</b>			<b>194.2</b>	<b>155.1</b>	<b>57.1</b>	<b>140.9</b>	<b>55.2</b>	<b>1.26</b>	<b>5.9</b>		

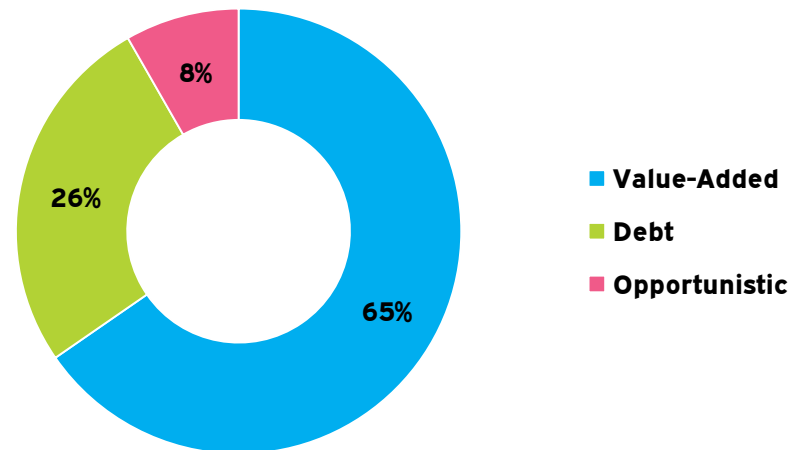
<sup>1</sup> Benchmark is drawn from Cambridge Associates | Real Estate, Median.

#### By Strategy

Percent of FMV

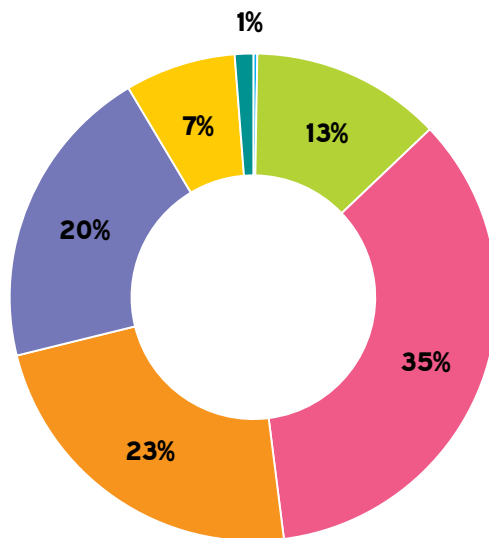


Percent of Exposure



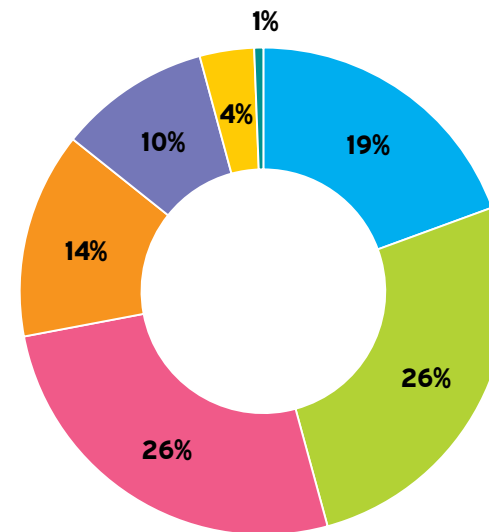
#### By Vintage

Percent of FMV



■ 2019  
■ 2018  
■ 2017  
■ 2015  
■ 2014  
■ 2011  
■ 2007

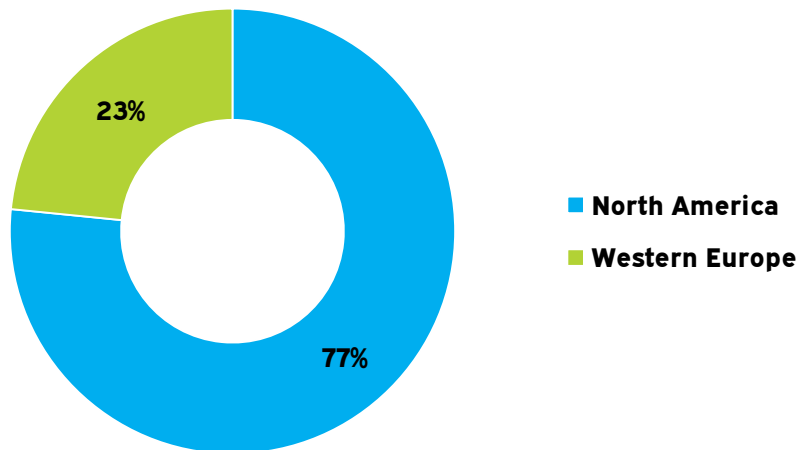
Percent of Exposure



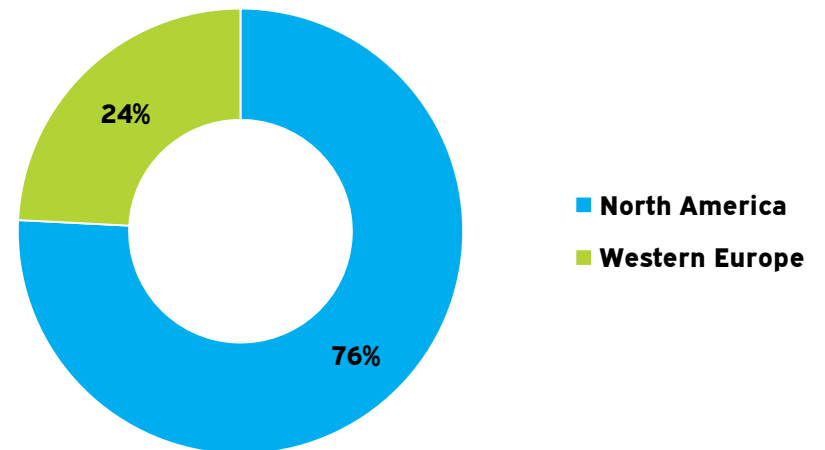
■ 2019  
■ 2018  
■ 2017  
■ 2015  
■ 2014  
■ 2011  
■ 2007

#### By Geographic Focus

Percent of FMV



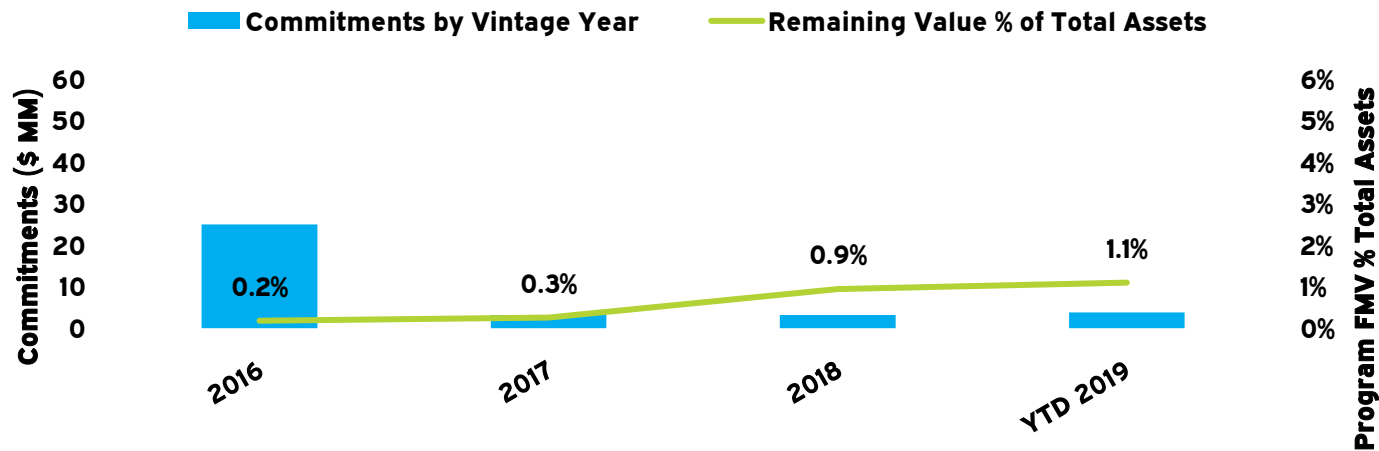
Percent of Exposure



## **Real Assets Program**

### Introduction

As of September 30, 2019, the System had committed \$35.2 million to four real assets funds. The total reported fair value of real assets investments was \$23.4 million at September 30, 2019, which equates to 1.1% of the overall Retirement System, versus a 3.0% policy target.



### Program Status

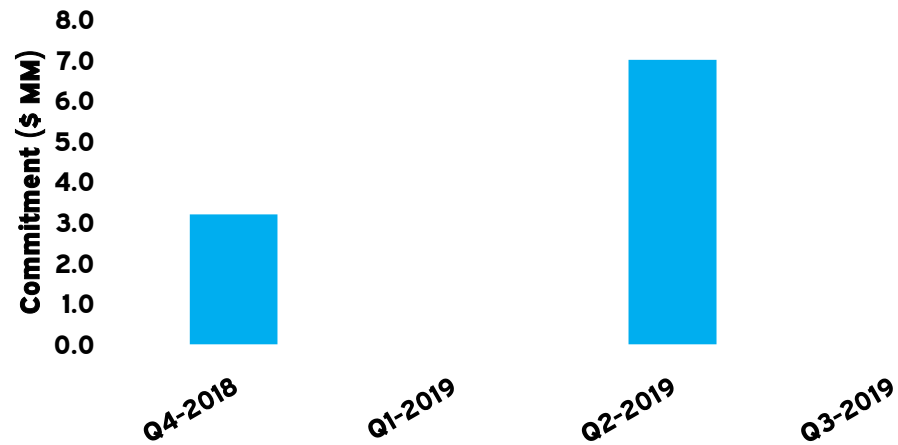
No. of Investments	4
Committed (\$ MM)	35.2
Contributed (\$ MM)	23.2
Distributed (\$ MM)	2.3
Remaining Value (\$ MM)	23.4

### Program Performance Since Inception

DPI	0.10x
TVPI	1.11x
IRR	6.8%

### Commitments

Recent Quarterly Commitments



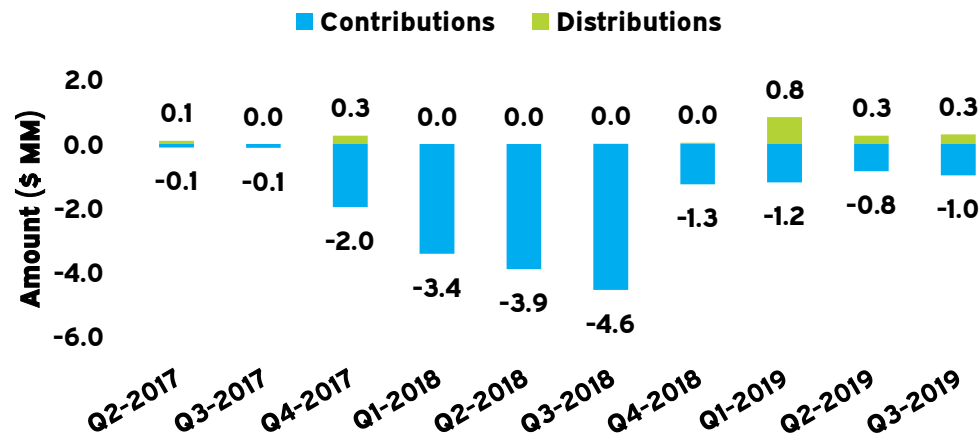
Commitments This Quarter

Fund	Strategy	Region	Amount (MM)
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None to report.

### Cash Flows

#### Recent Quarterly Cash Flows



#### Largest Contributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
GIP III	2016	Infrastructure	Global: Developed	0.67
Kimmeridge Energy V	2019	Energy	North America	0.16
Lime Rock VIII	2017	Energy	North America	0.11

#### Largest Distributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$MM)
GIP III	2016	Infrastructure	Global: Developed	0.30



### Significant Events

- During the third quarter, Global Infrastructure Partners III, L.P. ("GIP III") called \$0.67 million from the Retirement System.
- GIP III distributed \$0.30 million to the Retirement System.
- GIP III generated a \$0.31 million (or 1.5%) net change in value.
- The Retirement System made its first contribution of \$0.16 million to Kimmeridge Energy Fund V, L.P.

### By Strategy

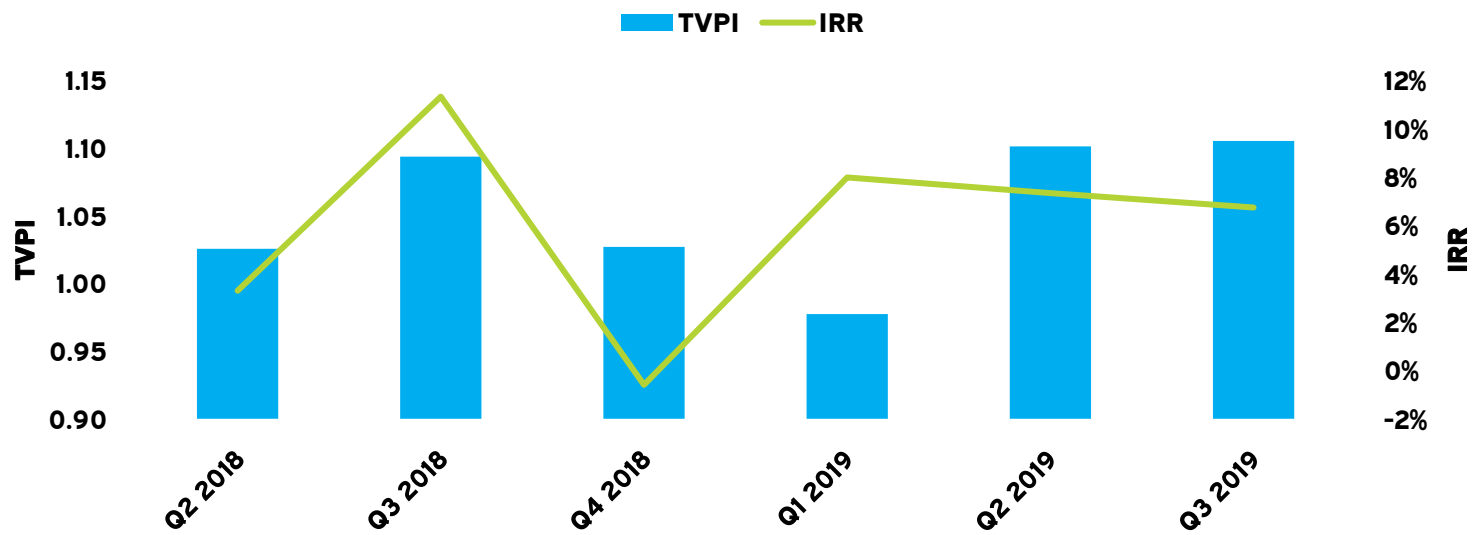
Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)
Energy	2	7.0	2.2	4.8	0.0	2.1	7.0	0.00	0.96	NM
Infrastructure	2	28.2	21.0	7.7	2.3	21.2	28.9	0.11	1.12	7.3
<b>Total</b>	<b>4</b>	<b>35.2</b>	<b>23.2</b>	<b>12.5</b>	<b>2.3</b>	<b>23.4</b>	<b>35.9</b>	<b>0.10</b>	<b>1.11</b>	<b>6.8</b>

### By Vintage

Group	Number	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	Exposure (\$ MM)	DPI (X)	TVPI (X)	IRR (%)	Benchmark TVPI <sup>1</sup> (X)	Benchmark IRR <sup>1</sup> (%)
2016	1	25.0	20.9	4.5	2.3	21.2	25.8	0.11	1.12	7.5	1.14	7.5
2017	1	3.2	2.1	1.2	0.0	2.1	3.3	0.00	0.99	NM	NM	NM
2018	1	3.2	0.0	3.2	0.0	NM	3.2	0.00	NM	NM	NM	NM
2019	1	3.8	0.2	3.6	0.0	0.1	3.7	0.00	0.51	NM	NM	NM
<b>Total</b>	<b>4</b>	<b>35.2</b>	<b>23.2</b>	<b>12.5</b>	<b>2.3</b>	<b>23.4</b>	<b>35.9</b>	<b>0.10</b>	<b>1.11</b>	<b>6.8</b>		

<sup>1</sup> Benchmark is drawn from Cambridge Associates | Infrastructure, Median.

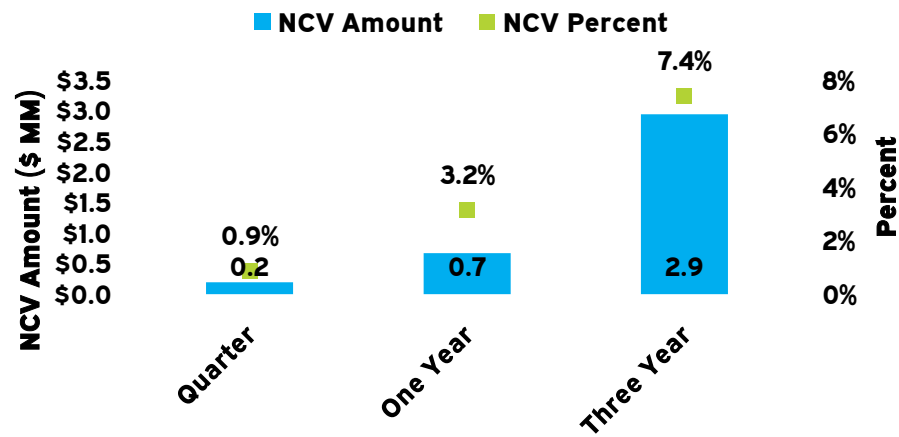
#### Since Inception Performance Over Time



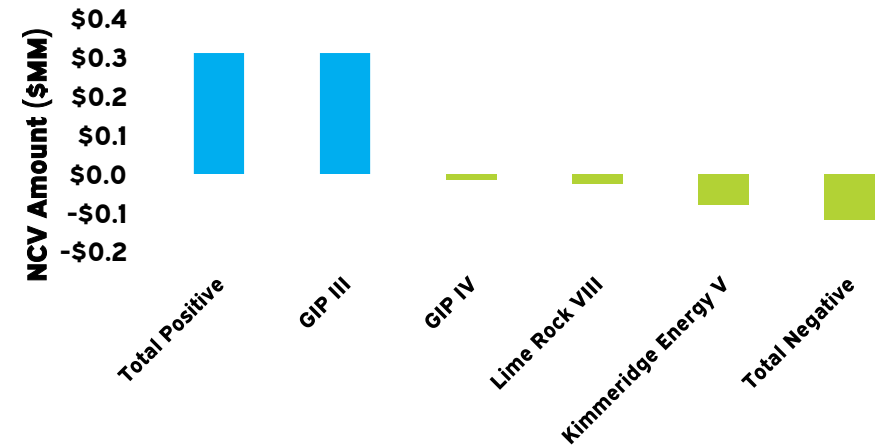
#### Horizon IRRs

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Real Assets Program	3.1	8.5	NA	NA	6.8

Periodic NCV



1 Quarter Drivers Of NCV



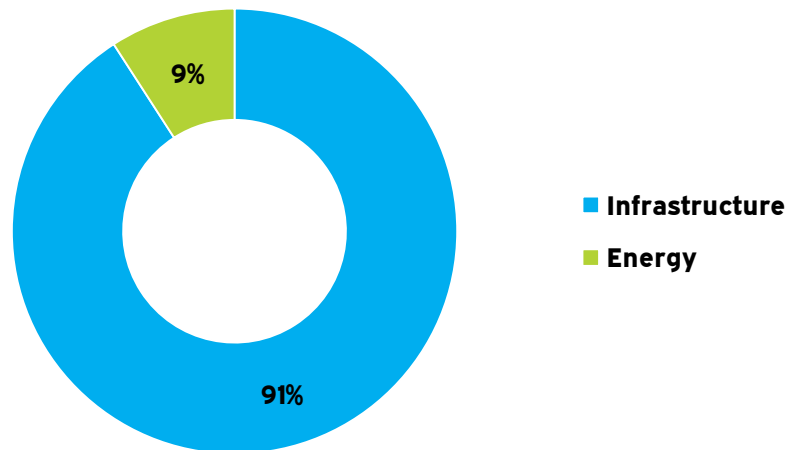
### Fund Performance: Sorted By Vintage And Strategy

By Investment	Vintage	Strategy	Committed (\$ MM)	Contributed (\$ MM)	Unfunded (\$ MM)	Distributed (\$ MM)	Remaining Value (\$ MM)	TVPI (X)	IRR (%)	BM TVPI <sup>1</sup> (X)	BM IRR <sup>1</sup> (%)
GIP III	2016	Infrastructure	25.0	20.9	4.5	2.3	21.2	1.12	7.5	1.14	7.5
Lime Rock VIII	2017	Energy	3.2	2.1	1.2	0.0	2.1	0.99	NM	NM	NM
GIP IV	2018	Infrastructure	3.2	0.0	3.2	0.0	NM	NM	NM	NM	NM
Kimmeridge Energy V	2019	Energy	3.8	0.2	3.6	0.0	0.1	0.51	NM	NM	NM
<b>Total</b>			<b>35.2</b>	<b>23.2</b>	<b>12.5</b>	<b>2.3</b>	<b>23.4</b>	<b>1.11</b>	<b>6.8</b>	<b>NA</b>	<b>NA</b>

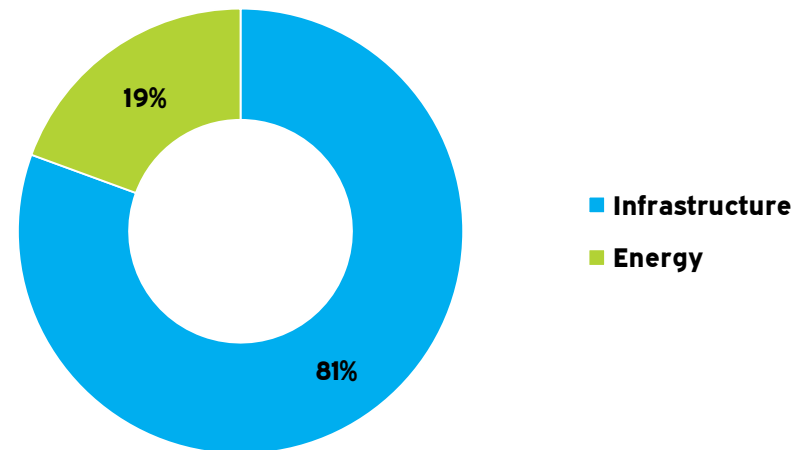
<sup>1</sup> Benchmark is drawn from Cambridge Associates | Infrastructure, Median.

#### By Strategy

Percent of FMV

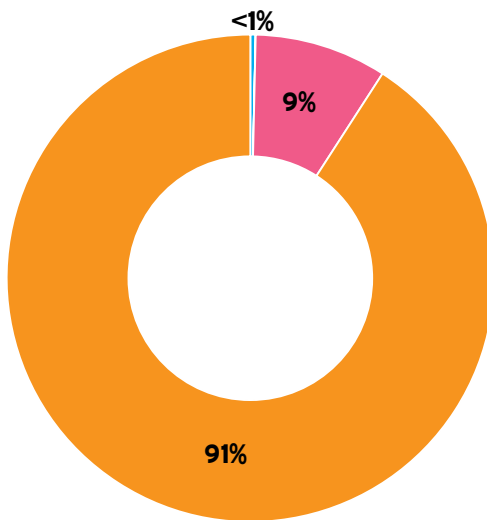


Percent of Exposure

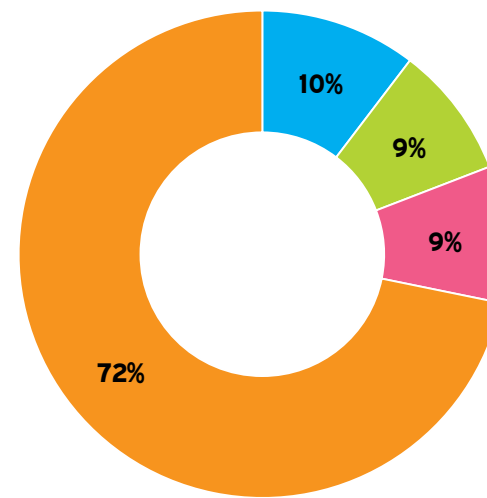


#### By Vintage

Percent of FMV

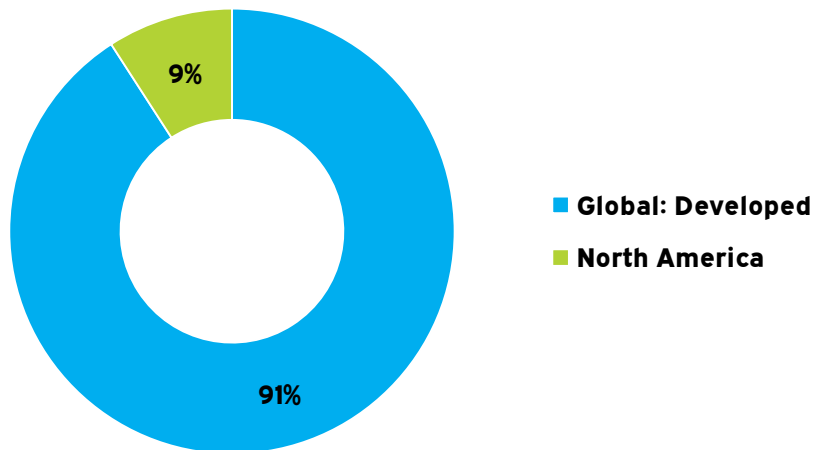


Percent of Exposure

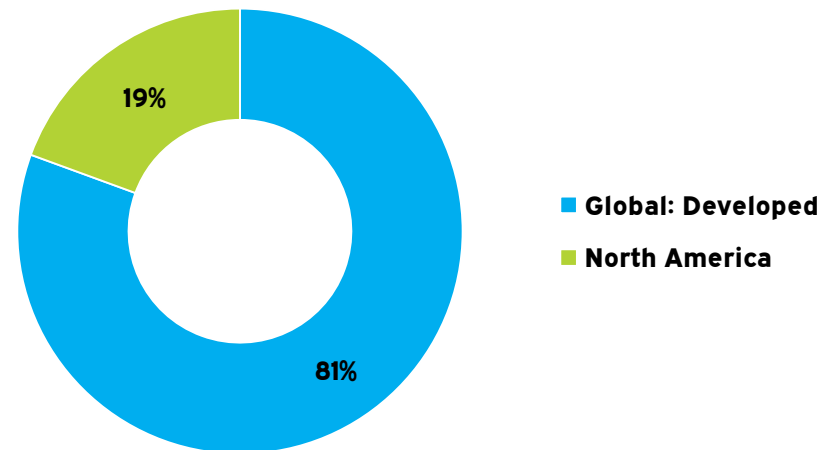


#### By Geographic Focus

Percent of FMV



Percent of Exposure





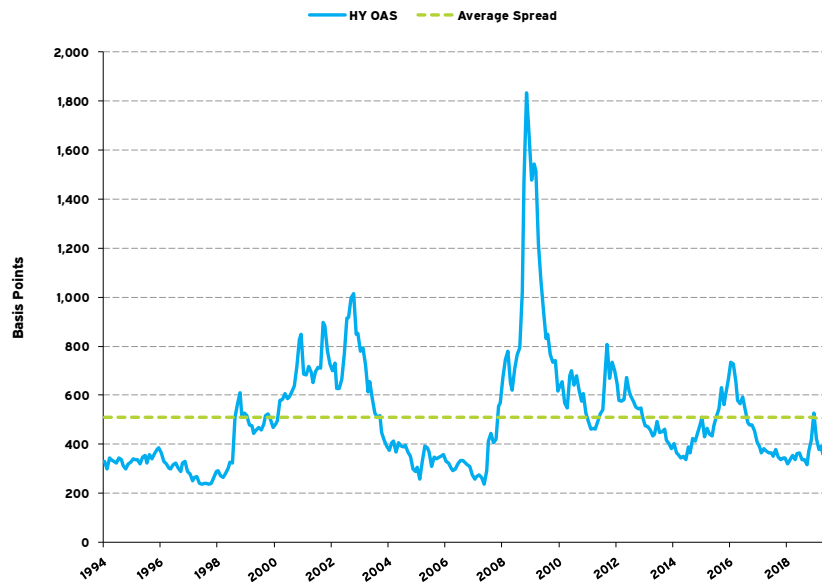
## Appendices

### Private Debt

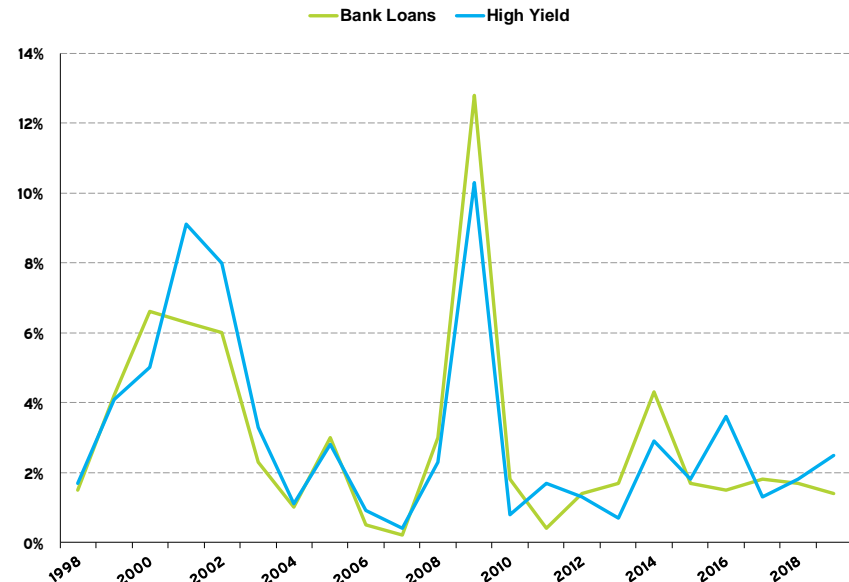
Credit markets remained benign in the third quarter. In the public markets, both spreads and default rates in high yield and bank loans were fairly stable. Private credit markets performed well with steady origination levels and modest default and impairment rates. Falling interest rates continued to provide a tailwind for all traditional credit asset classes as the 10-year Treasury fell as low as 1.5% for the first time in three years. High yield spreads finished the quarter at 373 basis points, approximately 135 basis points below the 25-year average.

Bank loan defaults finished the quarter at a consistent 1.3% while high yield increased slightly to 2.5%. Recovery rates were also largely unchanged. Bank loan investors and managers continue to actively discuss prospective first lien loan recoveries in the current market environment of fewer covenants and higher leverage levels.

#### U.S. Corporate High Yield Spread<sup>1</sup>



#### U.S. Corporate Default Rate<sup>2</sup>



<sup>1</sup> Source: Barclays Capital

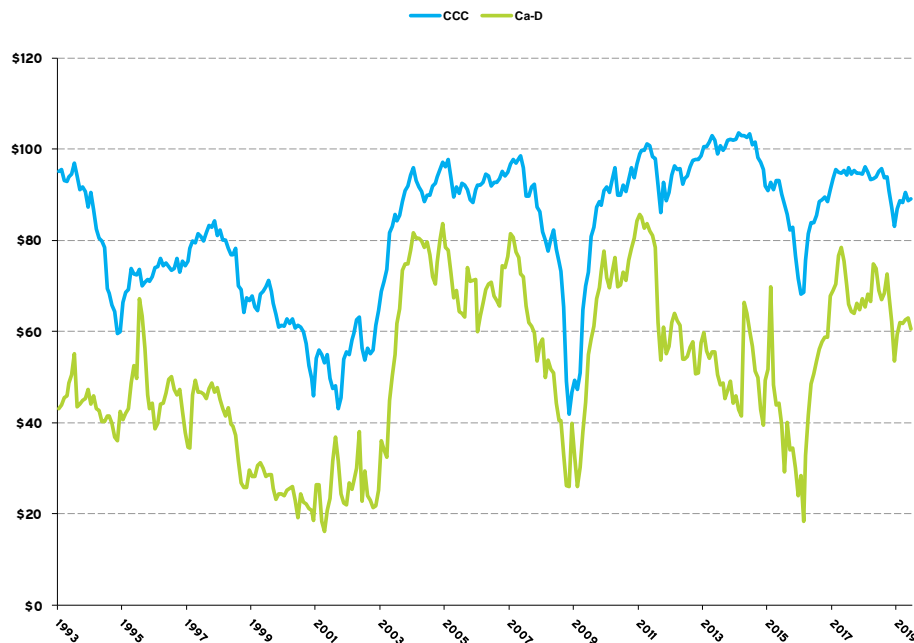
<sup>2</sup> Source: JP Morgan

#### Distressed & Opportunistic Debt

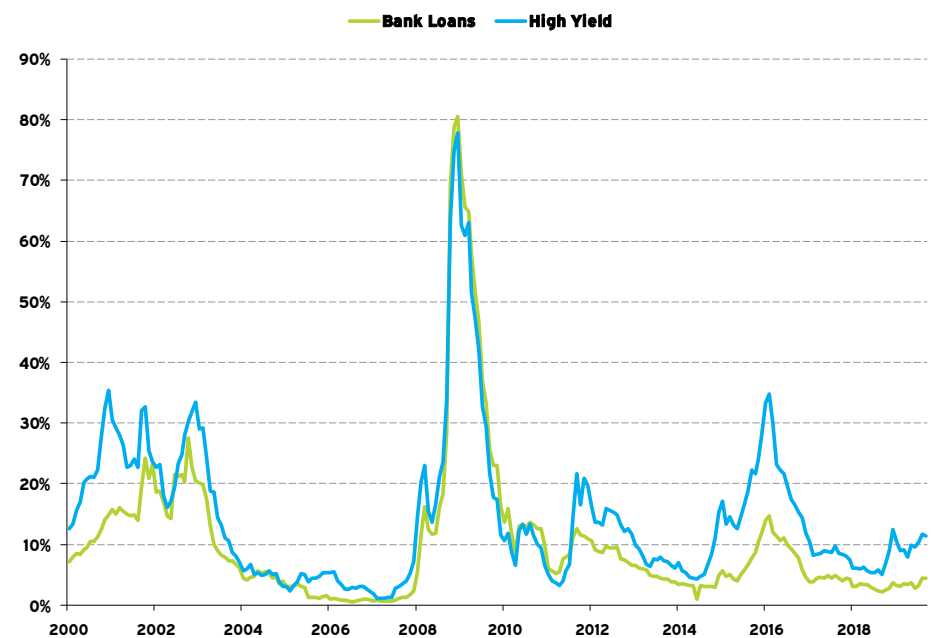
Distressed opportunities modestly increased during the quarter but continue to remain low by historical standards. The largest default during the quarter was Weatherford, an energy company with more than \$6 billion in total debt. The other large defaults in the quarter, EP Energy and Sanchez, were also in the energy sector with another \$6.5 billion of combined total debt which was primarily comprised of high yield bonds.

The industries with the highest high yield and bank loan default rates in 2019 continue to be energy, metals and mining, diversified media and retail. Several distressed and opportunistic managers have targeted investments in these sectors as traditional lenders have reduced exposure.

#### Lower Rated Debt Pricing<sup>1</sup>



#### Distressed Ratio<sup>2</sup>



<sup>1</sup> Source: Barclays Capital

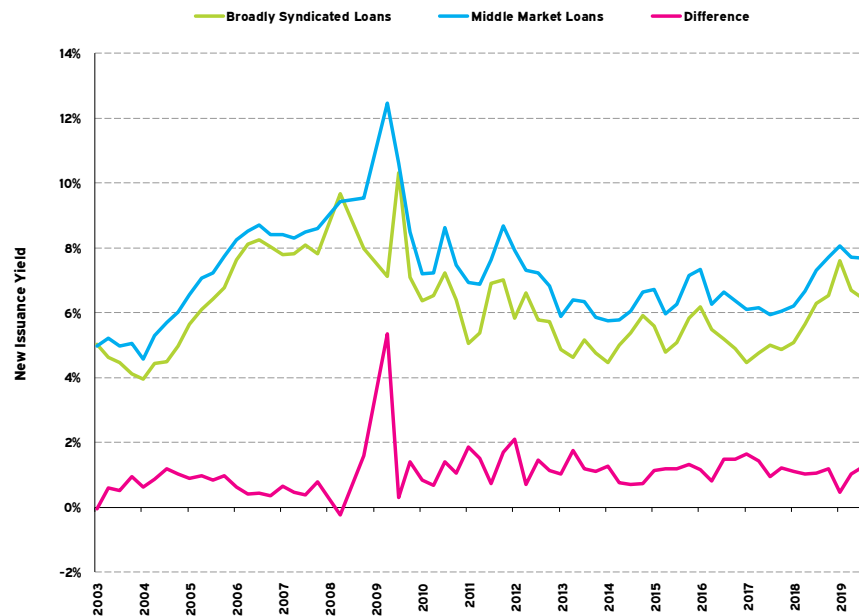
<sup>2</sup> Source: Bank Loans trading below \$80, Credit Suisse; High Yield trading at spread of more than 1,000bps, Deutsche Bank.

#### Private Senior & Subordinated Debt

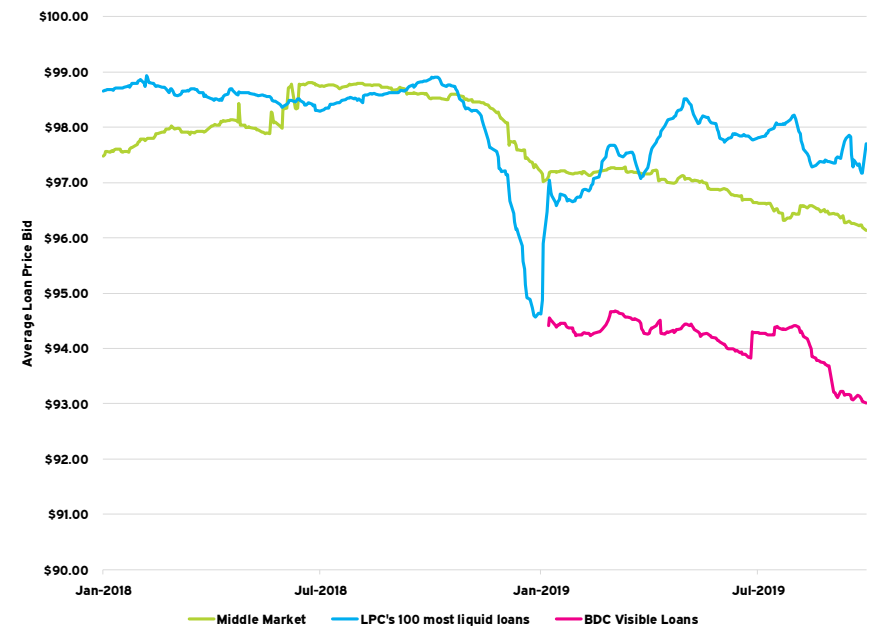
The spread between new issuance yields for direct lending loans and larger liquid loan yields widened during the quarter. This spread differential is likely driven by continued high demand for syndicated bank loans in the larger cap market by CLOs. Another dynamic that continues to develop is larger middle market lenders taking deals from the lower end of the syndicated market. In the third quarter, more than half the middle market LBO deals went to the direct lending market. Finally, covenant-lite issuance slightly decreased from 2018 levels.

Business Development Companies ("BDCs") continued to grow and leverage increased to more than 1.0x for the first time since the maximum leverage threshold was increased from 1.0x to 2.0x in 2018. While BDCs continued to grow, the non-accrual rate, a measurement of loans that have missed interest payments, has been slowly increasing.

#### Senior Loan New Issue Yields<sup>1</sup>



#### Senior Loan Secondary Market Pricing<sup>2</sup>

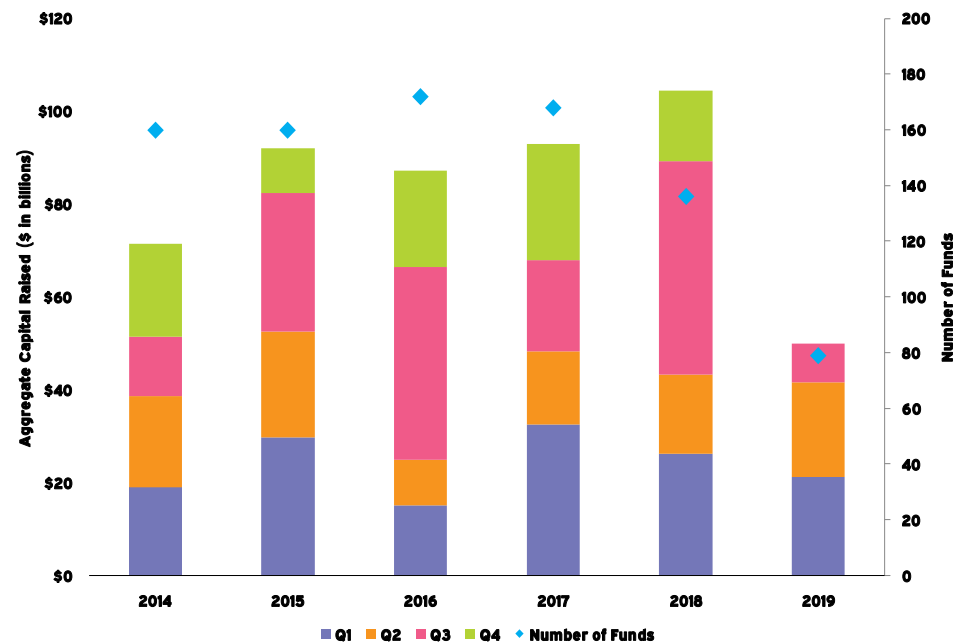


<sup>1</sup> Source: Refinitiv LPC

<sup>2</sup> Source: Refinitiv LPC

### Natural Resources

#### Global Quarterly Unlisted Natural Resource Fundraising<sup>1</sup>

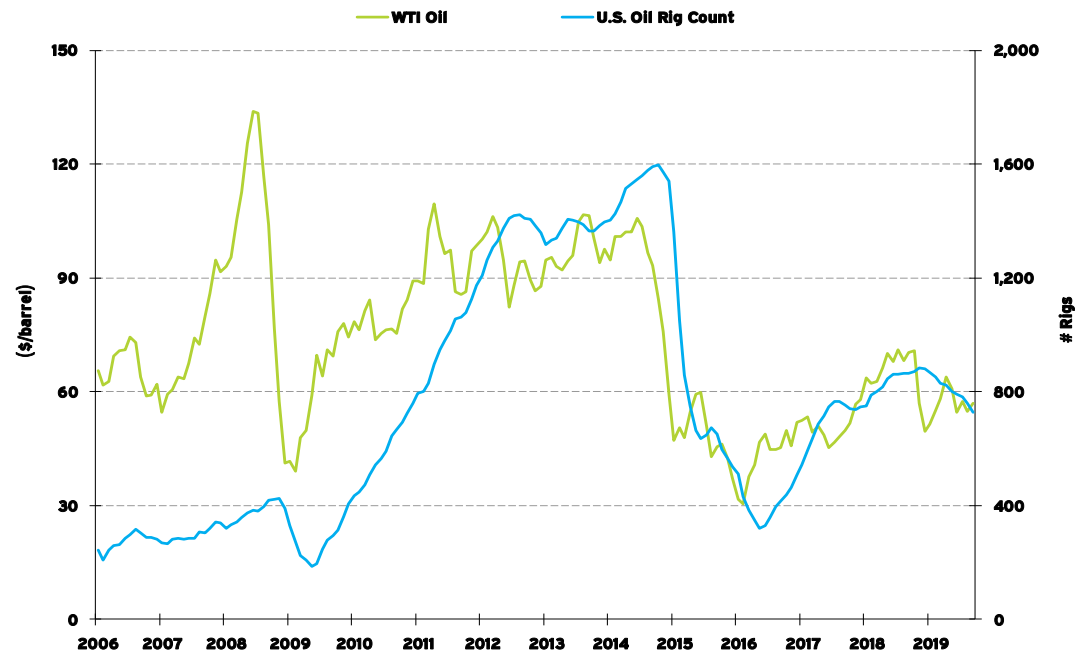


Capital raised in the third quarter of 2019 was substantially lower than in prior quarters, representing a decline of approximately 61% relative to the amount raised in the third quarter of 2018. The number of vehicles raised also fell during the third quarter with just 18 funds reaching final close. This quarter, the average fund size raised was \$500 million, below the 2018 average of \$800 million. As of September 30, 2019, Preqin reported a total of 313 unlisted natural resources funds with a combined fundraising target of approximately \$219 billion.

The majority of natural resources managers fundraising during the third quarter were focused on North America, accounting for nearly 63% of aggregate targeted capitalization in the market.

<sup>1</sup> Source: Preqin Private Capital Fundraising Update, Q3 2019.

#### Extracted Resources Oil Price vs. Active U.S. Rigs<sup>1</sup>

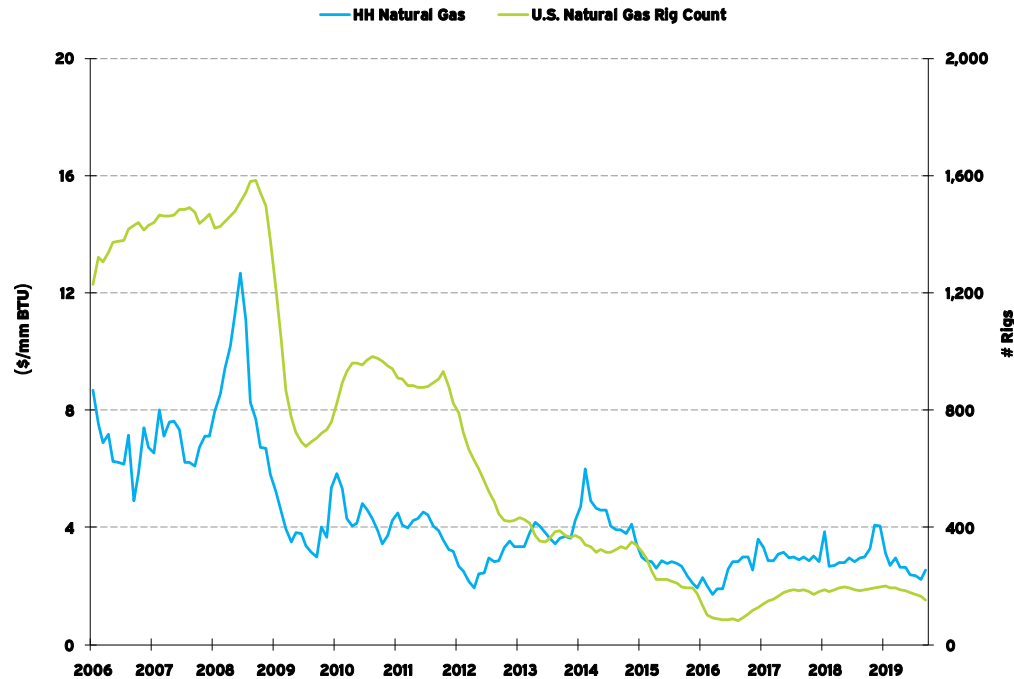


West Texas Intermediate ("WTI") oil prices increased by 4% to \$57 per barrel during the third quarter. In September, drone and missile attacks damaged Saudi Aramco's Abqaiq facility, the world's largest crude oil processing and stabilization plant, and the Khurais oil field in eastern Saudi Arabia. The attack highlighted geopolitical risks associated with the industry, potential global supply disruptions, and uncertainty of Saudi Aramco's plans of a future IPO. During the third quarter, the U.S. produced over 12.2 million barrels of oil equivalent per day. The oil rig count in the U.S. fell by 64 bringing the total to 726. U.S. gasoline prices for regular blend decreased by 5% to \$2.81 from the previous quarter, representing a 6% decrease from one year prior.

<sup>1</sup> Source: EIA and Baker Hughes.

### Extracted Resources

#### Natural Gas Price vs. Active U.S. Rigs<sup>1</sup>

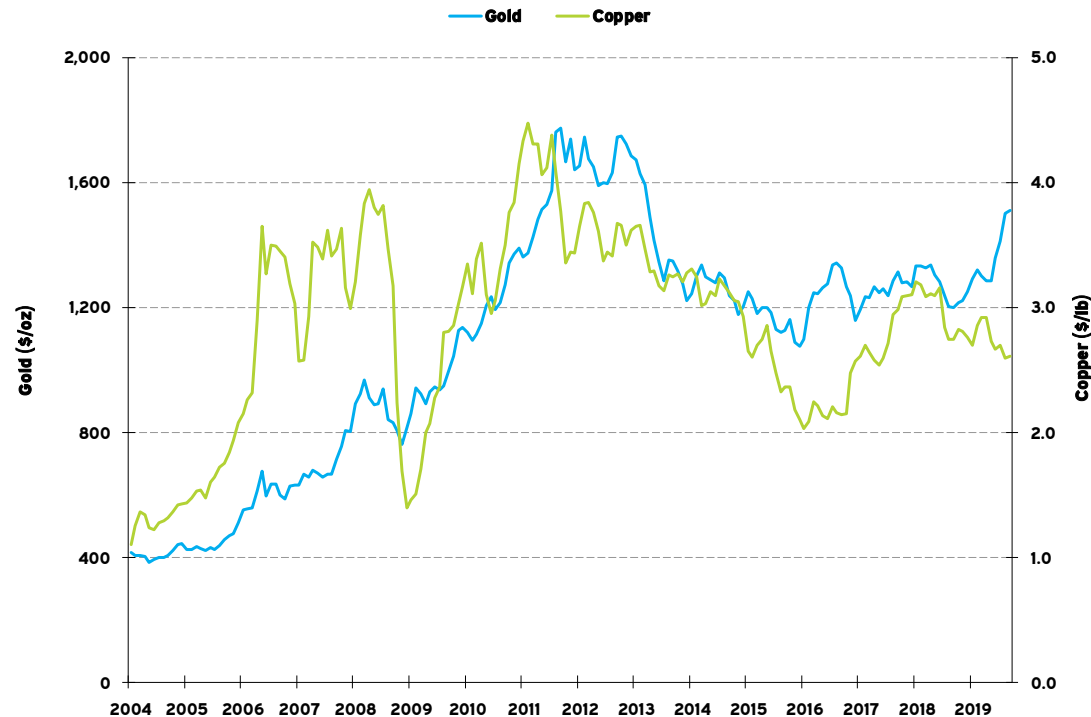


Henry Hub natural gas spot prices ended the quarter at approximately \$2.56/MM BTU, representing a 7% decrease from the prior quarter. Significant pricing differentials continue to exist between Henry Hub, the national benchmark for U.S. natural gas, and other markets; however, differential should moderate as midstream infrastructure continues to be developed. Despite a reduction in rig count during the quarter the U.S. natural gas production continues to be robust as a result of operational improvements and increased associated gas production from oil wells. Storage has absorbed a large portion of the recent production growth with natural gas inventories forecasted to expand in the coming years. During the third quarter, the natural gas rig count fell by 27 to 152 while daily production averages reached more than 101 billion cubic feet.

<sup>1</sup> Source: EIA and Baker Hughes.

#### Extracted Resources

#### Metals Prices<sup>1</sup>

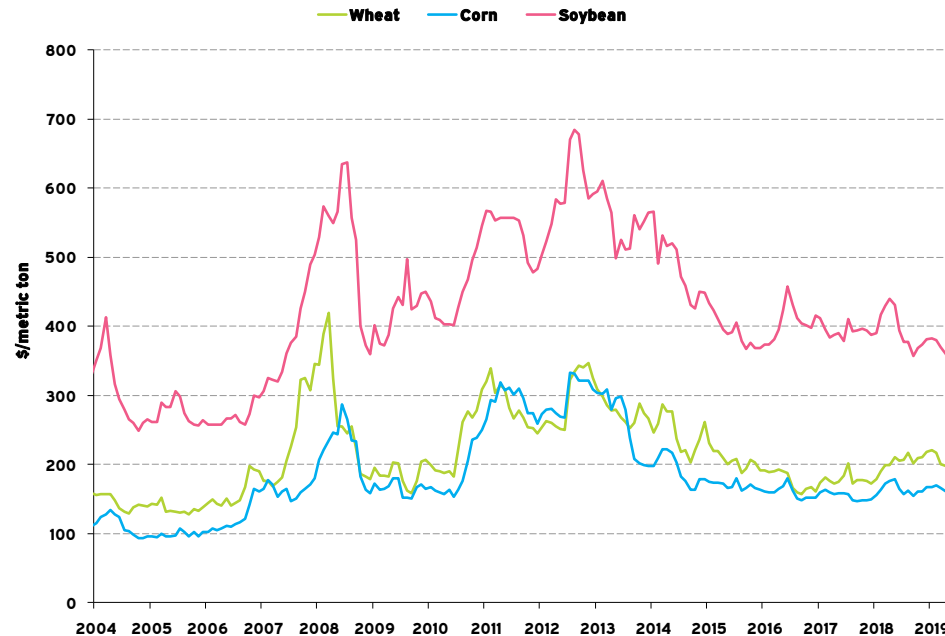


Geopolitical tensions continued into the third quarter headlined by the ongoing U.S. – China global trade war as well as economic uncertainty resulting from falling bond yields. Trade concerns continue to create uncertainty on global growth projections and the demand for certain base and industrial metals. Copper prices fell by approximately 2% to \$2.61 per ounce during the quarter. Safe-haven assets, such as gold, tend to fare better during turbulent periods. The price of gold rose to \$1,511 per ounce during the quarter. Relative to one year prior, copper and gold prices changed by -5% and +26%, respectively.

<sup>1</sup> Source: World Bank



### Harvested Resources Wheat, Corn, & Soybean<sup>1</sup>

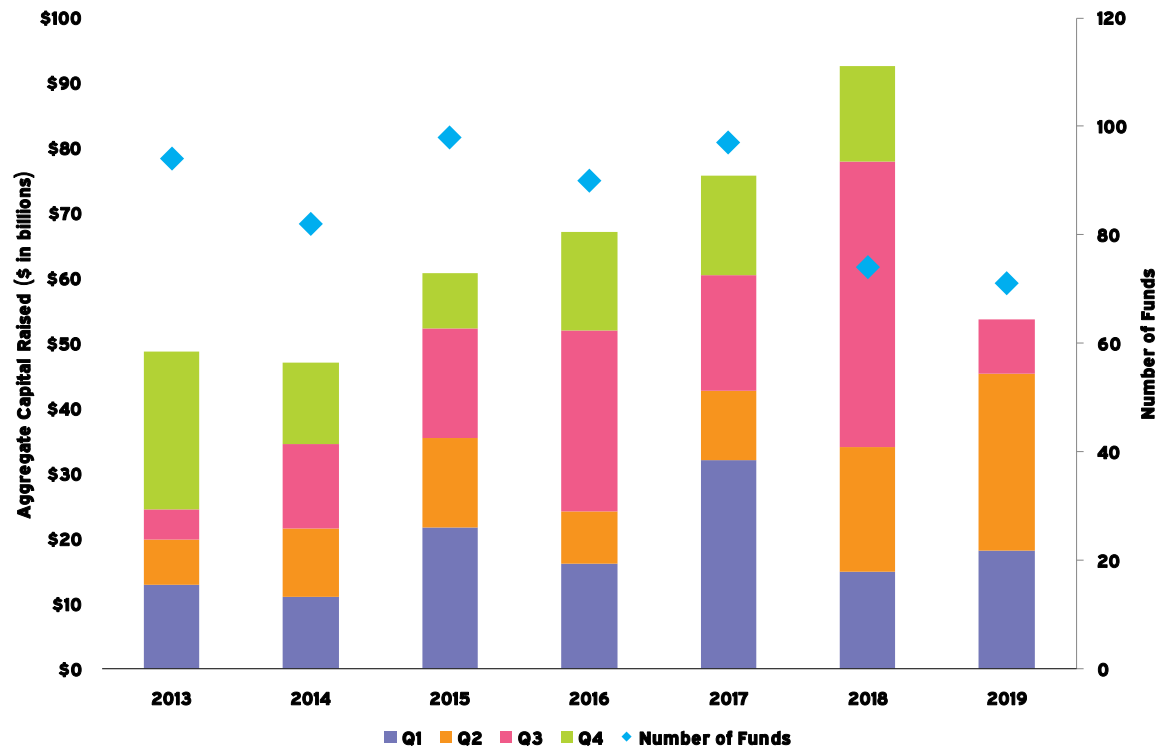


Agriculture continues to be adversely impacted by global trade wars, which have led to decreased export demand for the U.S. Record levels of rainfall and flooding across the Midwest and South U.S. regions significantly reduced grain plantings, specifically corn and wheat, during the third quarter. A trade agreement between the U.S. and Japan, and progress on a Phase I trade deal with China has the potential to significantly increase demand for U.S. agricultural products. During the quarter, wheat and corn prices fell by 9% and 19%, respectively, while soybean prices increased by 2%.

During the quarter, the NCREIF Farmland index experienced a 1% increase that was driven mainly by income gains of 1.0%. The NCREIF Timberland index increased by 0.2% primarily as a result of income gains of 0.7%.

<sup>1</sup> Source: World Bank

### Infrastructure Global Quarterly Unlisted Infrastructure Fundraising<sup>1</sup>

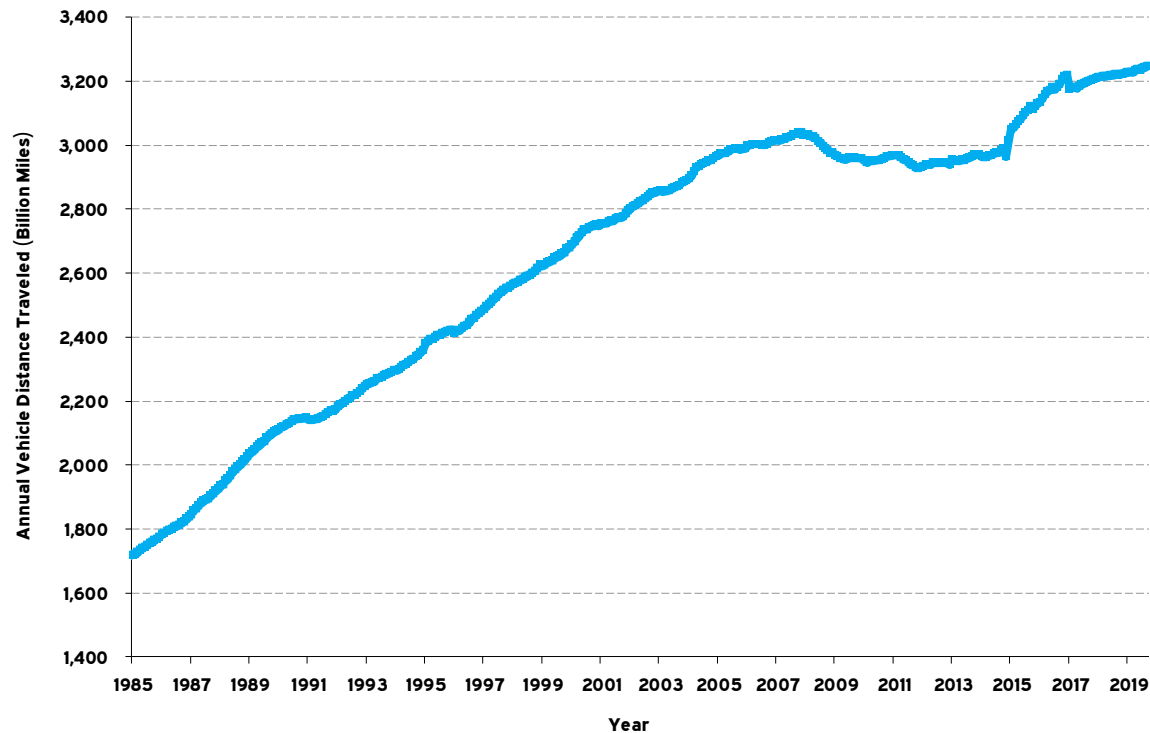


Capital raised in the third quarter of 2019 fell well below the amount raised in the second quarter of 2019. In the third quarter, the average fund size didn't exceed \$0.5 billion, falling below the 2018 average of \$1.3 billion. As of September 30, 2019, a total of 241 unlisted infrastructure funds were in market, according to Preqin, with a combined fundraising target of approximately \$200 billion.

The majority of infrastructure capital was focused on the developed market in North America, accounting for nearly 31% of the capital raised so far in 2019.

<sup>1</sup> Source: Preqin Private Capital Fundraising Update, Q3 2019.

### Moving 12-month Total on All U.S. Roads<sup>1</sup>

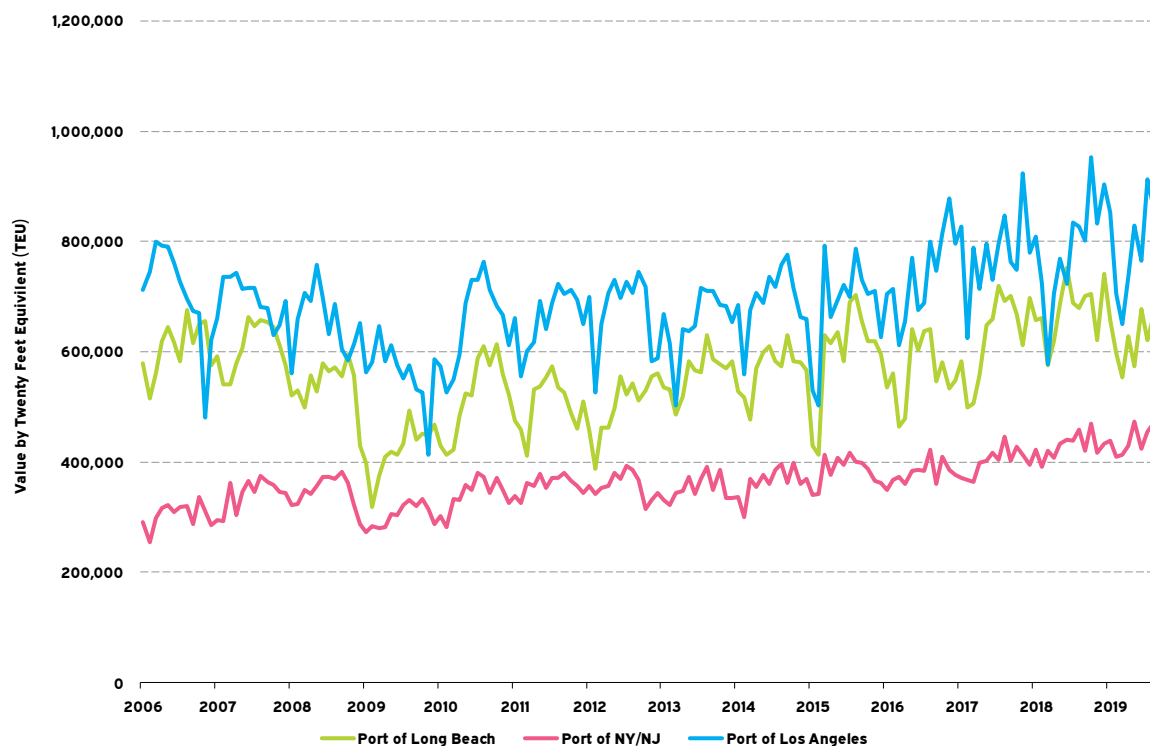


During the third quarter of 2019, travel on U.S. roads totaled approximately 850 billion miles. This represented an increase of 1.8% over the same period in 2018. Year-to-date, Federal Highway Administration data showed vehicle miles traveled increased by 21.2 billion miles, up 0.88% over 3Q 2018.

Up to this point in 2019, the average U.S. price of a gallon of gas went up to a monthly average of \$2.69 per gallon, with a peak of \$2.95. This compared to \$2.82 and \$2.99 seen in 2018. According to INRIX, Boston, Washington, D.C., and Chicago rank as the top three cities in the U.S. in which drivers spend the most hours in traffic.

<sup>1</sup> Source: U.S. Department of Transportation, Federal Highway Administration: Office of Highway Policy Information.

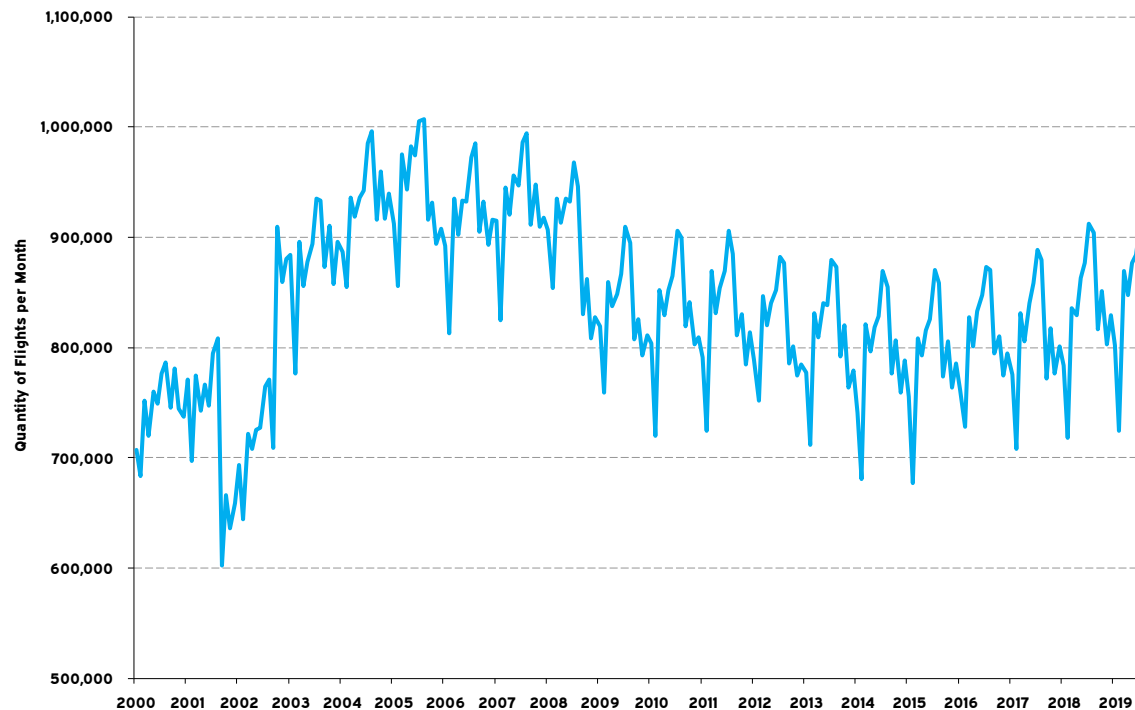
### U.S. Port Activity – Container Trade in TEUs



The chart represents the top three U.S. ports by container volume, as measured by twenty-foot equivalent units (TEU). Activity at the three ports provides a high-level representation of the volume of imports received into the U.S. more broadly.

During the third quarter of 2019, volumes at the three ports increased by 54,000 units relative to the same period in 2018. On a year-over-year basis, the combined port volumes increased by 500,434 TEU, or 2.2%, over the prior 12 month period. All three ports saw an increase in year-over-year activity. The Port of Long Beach recorded a decrease of 3.1% (253,678 TEU), the Port of NY/NJ reported an increase of 3.9% (196,996 TEU) and the Port of Los Angeles recorded an increase of 6.0% (557,116 TEU) from the prior 12 months.

### Total U.S. Domestic and International Flights<sup>1</sup>

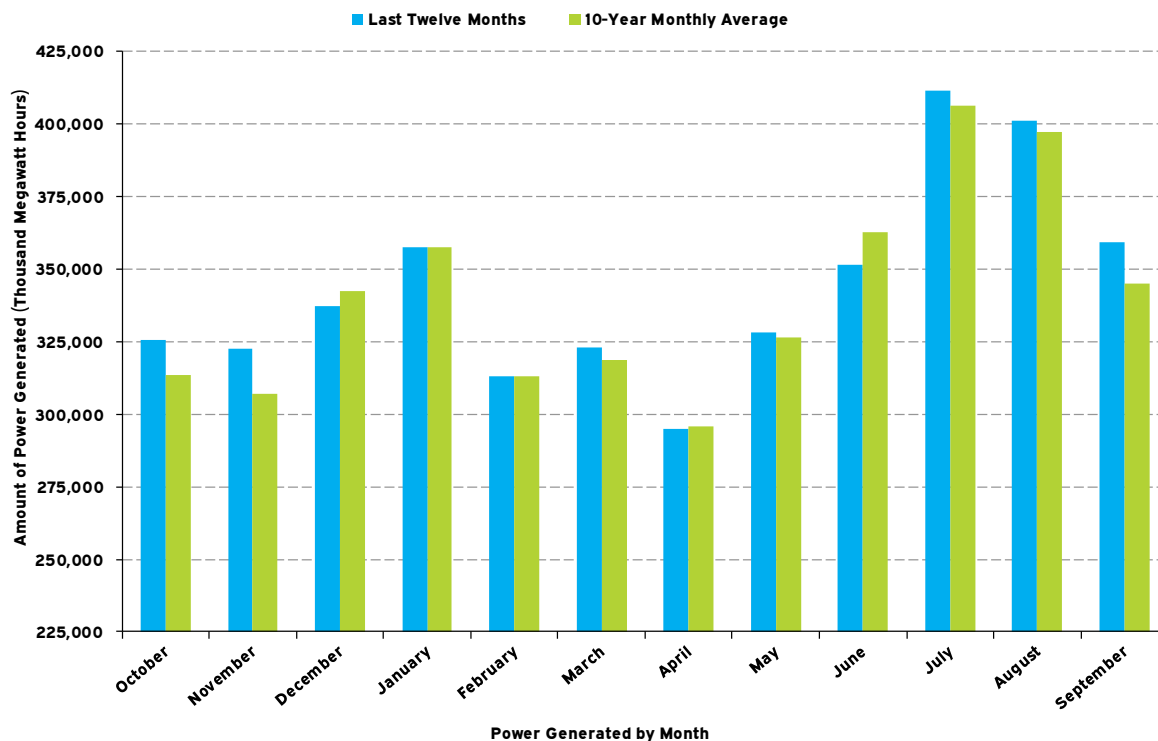


The chart above represents all U.S. domestic and international flights, excluding foreign point-to-point flights by month. Air traffic is cyclical with peaks in the summer months and declines in the winter months.

There were nearly 30,000 more flights during the third quarter of 2019, representing a 1.1% increase compared to the same period in 2018. Air traffic activity also increased by 2.2% for the 12 months ending September 30, 2019 over the previous period. In addition to the number of flights during the third quarter increasing year-over-year, the total number of passengers travelling on U.S. and international airlines increased by 3.9% from 2018 to 2019, which indicates higher capacity factors among airlines compared to the prior period.

<sup>1</sup> Source: Bureau of Transportation Statistics: Flights, All U.S., and Foreign Carriers.

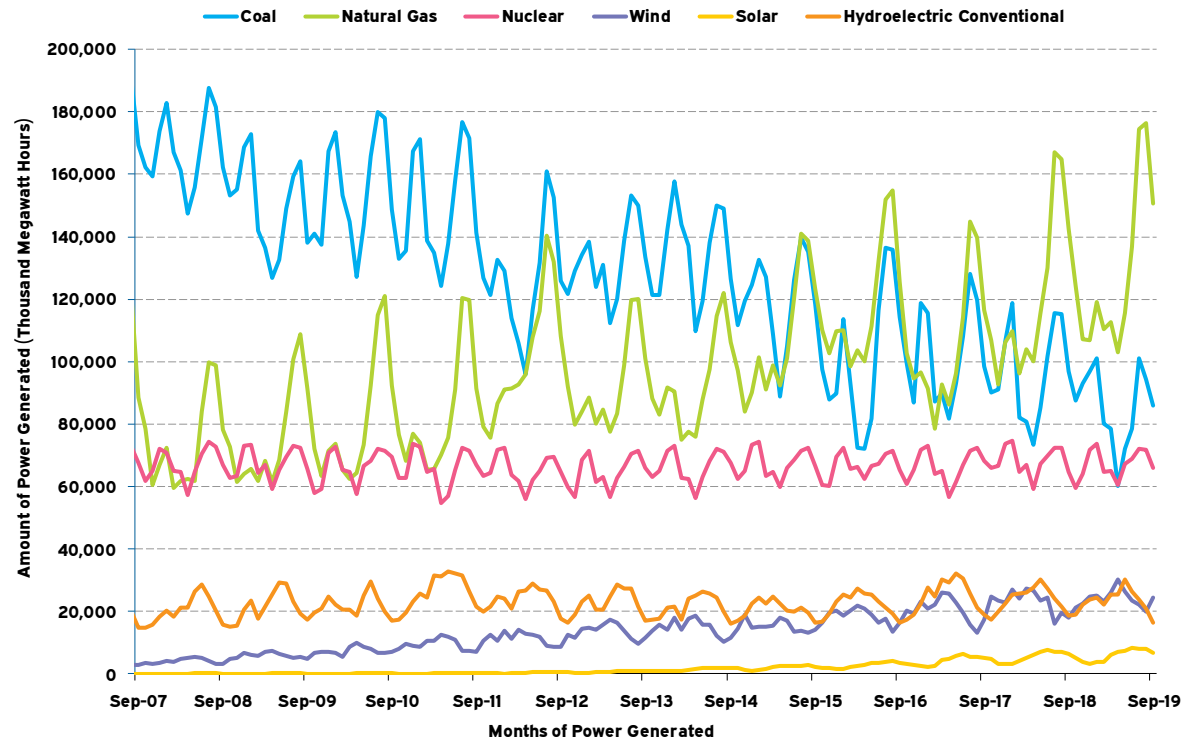
### Total U.S. Power Generation<sup>1</sup>



The graph above represents the total net generation for the past 12 months compared to the 10-year average for each month. Over the past year, power generation exceeded the 10-year average in 9 out of the 12 months. Net energy generation in the U.S. decreased by 0.6% during the third quarter, compared to the same period in 2018. For the 12 months ended September 30, 2019, net energy generation decreased by 0.9% over the previous 12 months.

<sup>1</sup> Source: U.S. Energy Information Administration: Electric Power Monthly, September 2019.

### U.S. Power Generation by Source<sup>1</sup>

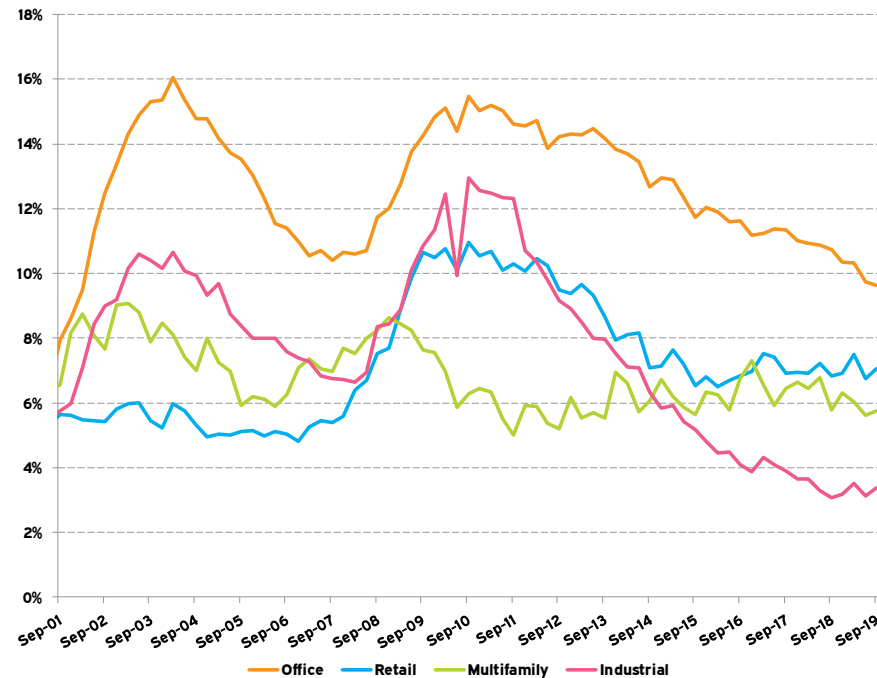


When comparing individual generation sources in the U.S., natural gas, nuclear, wind, and solar increased 5.6%, 0.3%, 23.7%, and 11.3% respectively in the third quarter of 2019 as compared to the same period in the previous year. Generation from coal and hydroelectric conventional dropped by 14.2% and 5.0% respectively, during the same period. Wind and utility scale solar continue to make up a small portion of total net energy generation in the U.S., accounting for only 5.6% and 1.9% of energy generation in the third quarter, while coal, natural gas, and nuclear accounted for 24.0%, 42.8%, and 17.9%, respectively. However, the growth of wind and solar as sources of energy generation continues to increase at a faster rate than coal and natural gas, especially over the last couple of years.

<sup>1</sup> Source: U.S. Energy Information Administration: Electric Power Monthly, September 2019.

### Real Estate Fundamentals

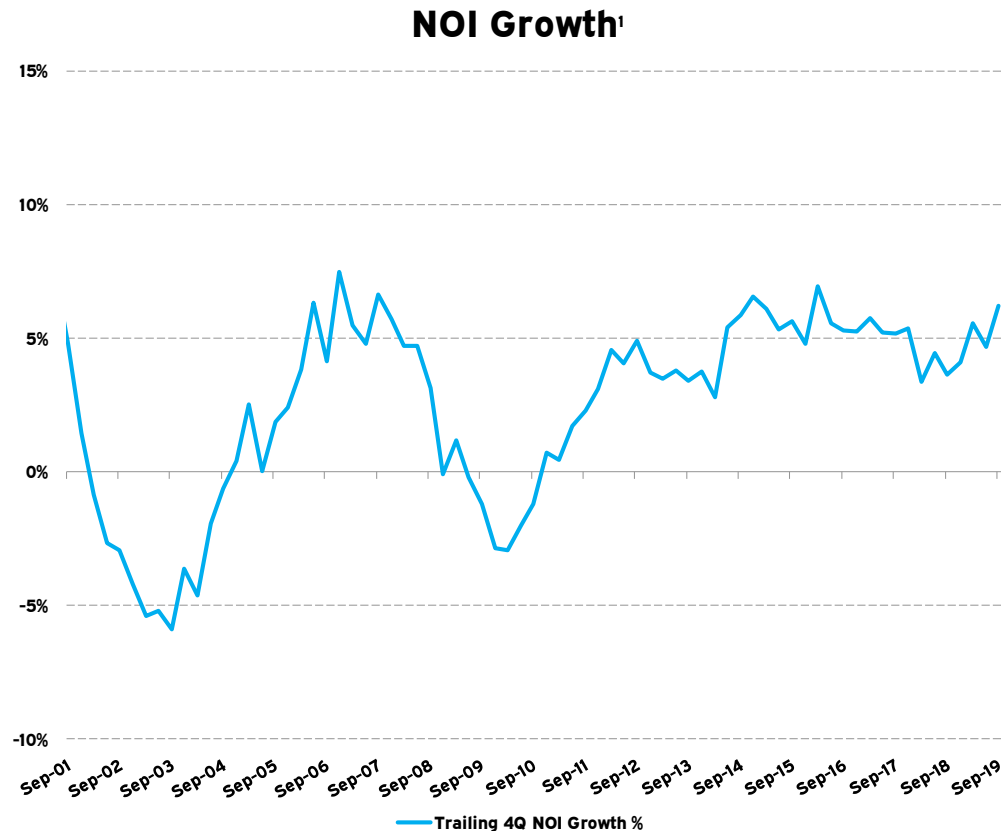
#### Vacancy by Property Type<sup>1</sup>



In the third quarter of 2019, vacancy rates increased for all property types except office. Multifamily vacancies have fluctuated around 6.0% since 2009. Retail vacancies have flattened over the last three years, while office vacancies continue on a downward trend. Industrial vacancies appear to have bottomed out just above 3.0%, at all-time lows for the sector. Compared to one year ago, vacancy rates in multifamily decreased 2 basis points, office decreased 112 basis points, industrial decreased 30 basis points, and retail increased 21 basis points. Overall, the vacancy rate across all properties decreased 8 basis points from Q3 2018.

<sup>1</sup> Source: NCREIF

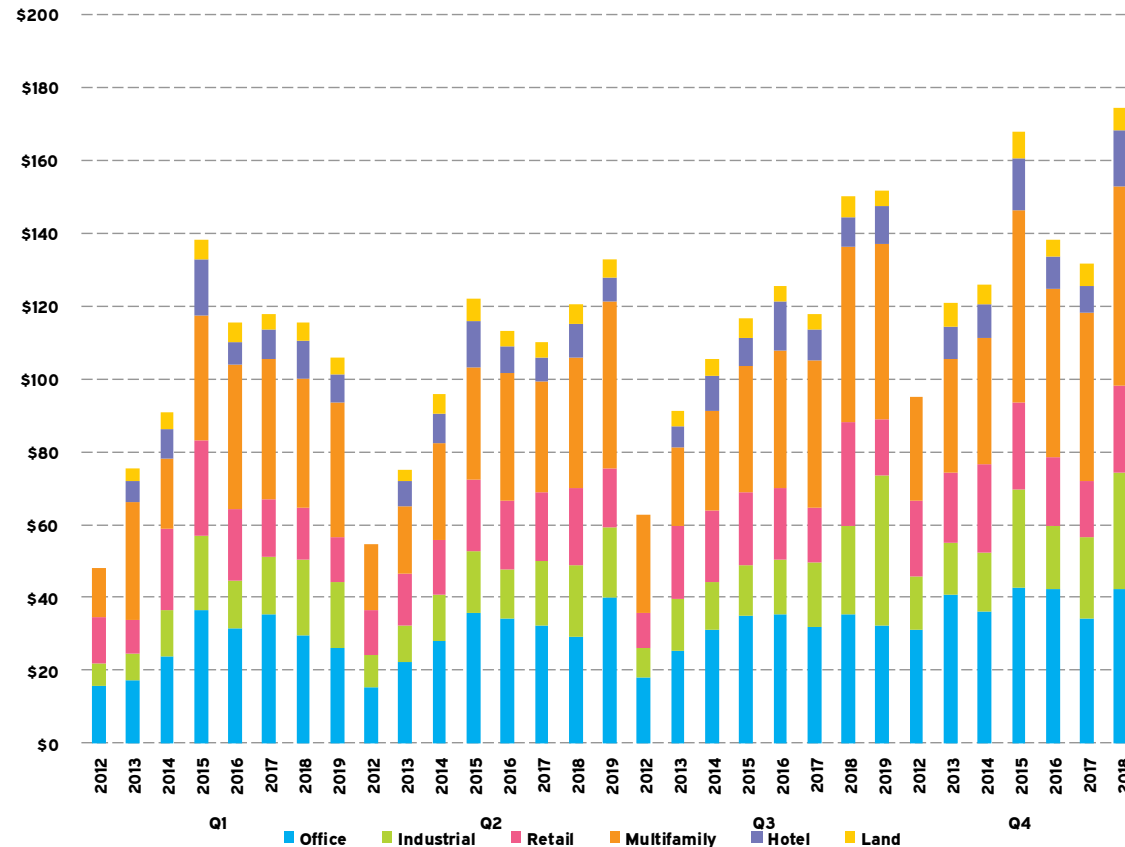




The trailing twelve month rate of NOI increased to 6.2% in the third quarter of 2019. Continued growth of the U.S. economy coupled with only moderate new construction has allowed property owners to increase rents and lease vacant space. The strongest NOI growth continues to be within the industrial sector, trending at 8.0% for the trailing year ending Q3 2019. Office NOI growth increased to 7.0%, while apartment decreased slightly to 6.8%. Retail NOI growth bounced back from a negative second quarter and is currently at 3.5%.

<sup>1</sup> Source: NCREIF

#### Transaction Volume (\$bn)<sup>1</sup>

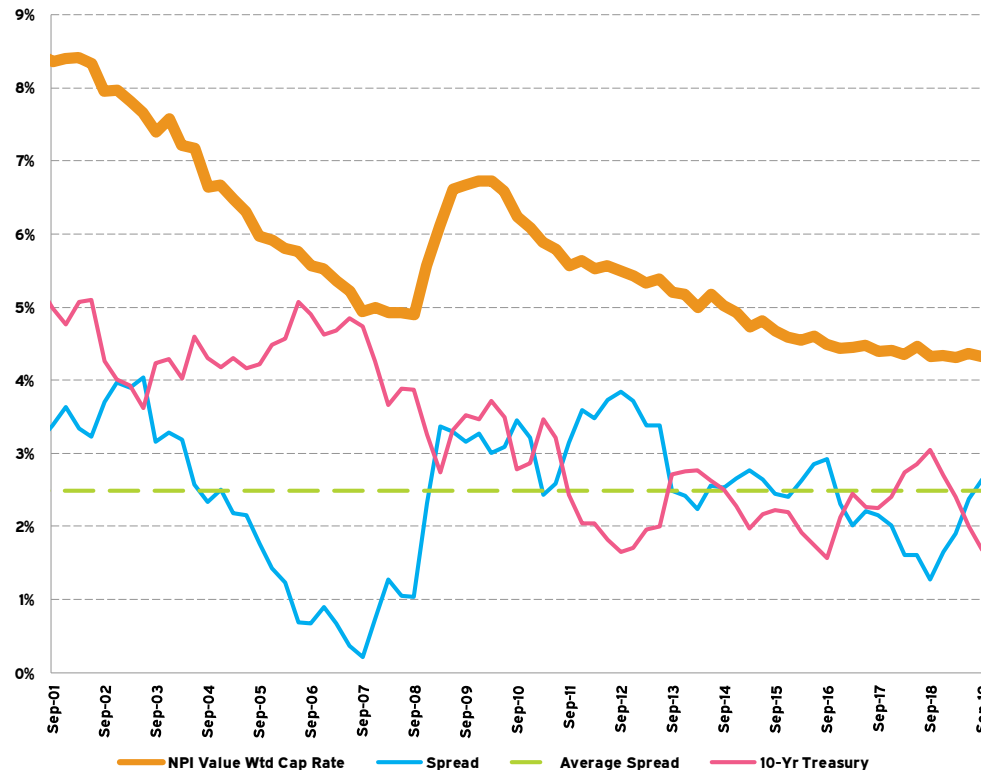


Private real estate transaction volume for properties valued over \$2.5 million was up for Q3 2019 to \$152 billion. Compared to a year ago, industrial (+70%) and hotel (+36%) saw increases to transaction volumes, while retail (-47%), office (-9%), and multifamily (-1%) saw decreases. Multifamily and industrial properties made up the largest percentages of total transaction volume during the quarter, at 32% and 27%, respectively.

<sup>1</sup> Source: PREA

### Real Estate Capital Markets

#### Cap Rates vs. 10-Year Treasury<sup>1</sup>



The NPI Value Weighted Cap Rate continued to hover around 4.3%. The 10-year Treasury yield peaked above 3.0% in Q3 2018, but continues to trend down, finishing Q3 2019 at 1.7%. The spread between cap rates and treasury yields increased to 264 basis points, which is 15 basis points above the long term average spread.

<sup>1</sup> Source: NCREIF and U.S. Department of the Treasury

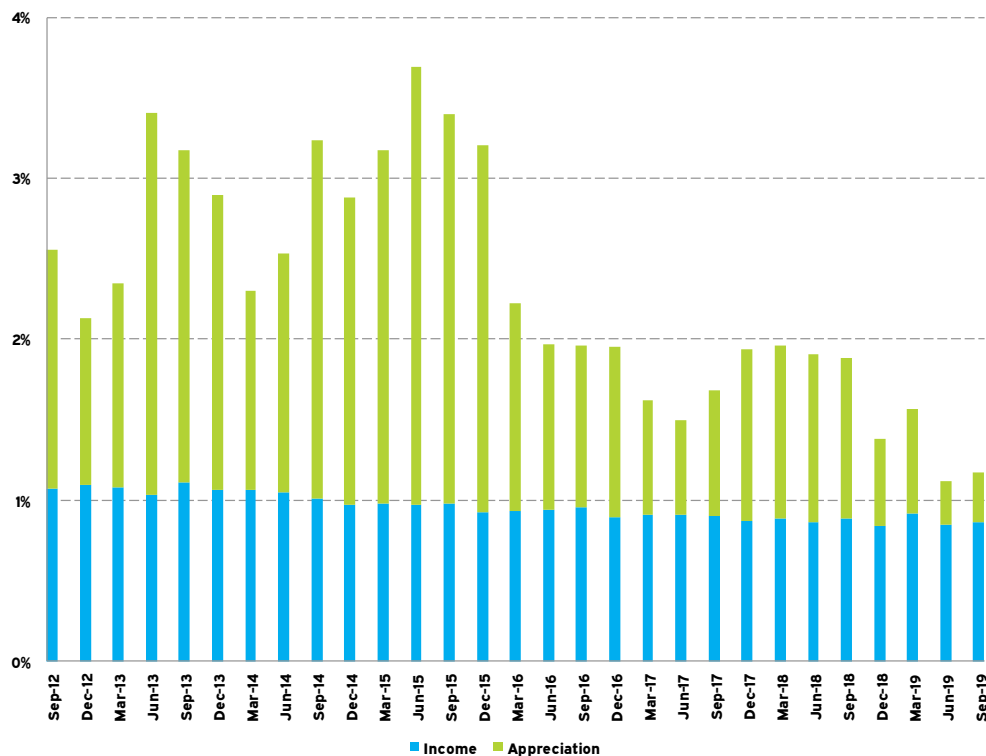
### Trailing Period Returns<sup>1</sup>

<i>As of September 30, 2019</i>	1 Year	3 Years	5 Years	10 Years
NFI-ODCE (EW, net)	5.3%	6.7%	8.7%	9.9%
NFI-ODCE (VW, net)	4.6	6.3	8.4	9.8
NCREIF Property Index	6.2	6.8	8.6	9.8
<b>NAREIT Equity REIT Index</b>	<b>20.7</b>	<b>8.9</b>	<b>11.0</b>	<b>13.6</b>

Private real estate indices have continued to post positive returns, driven by strong property-level fundamentals and a low interest rate environment. Recent public real estate performance has experienced significant volatility with negative returns in Q4 2018, but strong returns in 2019 thus far.

<sup>1</sup> Source: NCREIF

#### ODCE Return Components<sup>1</sup> (Equal Weight, Net)



The NFI-ODCE Equal Weight return for Q3 2019 was up slightly from the previous quarter to 1.2%, about 6 basis points higher than the previous quarter. The income component of the quarterly return continues to remain consistent around 0.9%. Appreciation has compressed, adding only 31 basis points to the benchmark's Q3 2019 return.

<sup>1</sup> Source: NCREIF

Below are details on specific terminology and calculation methodologies used throughout this report:

Committed	The original commitment amount made to a given fund. Some funds may be denominated in non-USD currencies, and such commitment amounts represent the sum of fund contributions translated to USD at their daily conversion rates plus the unfunded balance translated at the rate as of the date of this report.
Contributed	The amount of capital called by a fund manager against the commitment amount. Contributions may be used for new or follow-on investments, fees, and expenses, as outlined in each fund's limited partnership agreement. Some capital distributions from funds may reduce contributed capital balances. Some funds may be denominated in non-USD currencies, and such aggregate contributions represent the sum of each fund contribution translated to USD at its daily conversion rate.
Distributed	The amount of capital returned from a fund manager for returns of invested capital, profits, interest, and other investment related income. Some distributions may be subject to re-investment, as outlined in each fund's limited partnership agreement. Some funds may be denominated in non-USD currencies, and such aggregate distributions represent the sum of each fund distribution translated to USD at its daily conversion rate.
DPI	Acronym for "Distributed-to-Paid-In", which is a performance measurement for Private Market investments. The performance calculation equals Distributed divided by Contributed. DPIs for funds and groupings of funds are net of all fund fees and expenses as reported to by fund managers to Meketa. Program-level DPIs are net of both fund fees and expenses and fees paid to Meketa attributable to the Program.
Exposure	Represents the sum of the investor's Unfunded and Remaining Value.
IRR	Acronym for "Internal Rate of Return", which is a performance measurement for Private Market investments. IRRs are calculated by Meketa based on daily cash flows and Remaining Values as of the date of this report. IRRs for funds and groupings of funds are net of all fund fees and expenses as reported to by fund managers to Meketa. Program-level IRRs are net of both fund fees and expenses and fees paid to Meketa attributable to the Program.
NCV	Acronym for "Net Change in Value", which is a performance measurement for Private Market investments. The performance calculation equals the appreciation or depreciation over a time period neutralized for the impact of cash flows that occurred during the time period.

NM	Acronym for "Not Meaningful", which indicates that a performance calculation is based on data over too short a timeframe to yet be meaningful or not yet possible due to inadequate data. Meketa begins reporting IRR calculations for investments once they have reached more than two years since first capital call. NM is also used within this report in uncommon cases where the manager has reported a negative Remaining Value for an investment.
Remaining Value	The investor's value as reported by a fund manager on the investor's capital account statement. All investor values in this report are as of the date of this report, unless otherwise noted. Some funds may be denominated in non-USD currencies, and such remaining values represent the fund's local currency value translated to USD at the rate as of the date of this report.
TVPI	Acronym for "Total Value-to-Paid-In", which is a performance measurement for Private Market investments. The performance calculations represents Distributed plus Remaining Value, then divided by Contributed. TVPIs for funds and groupings of funds are net of all fund fees and expenses as reported to by fund managers to Meketa. Program-level TVPIs are net of both fund fees and expenses and fees paid to Meketa attributable to the Program.
Unfunded	The remaining balance of capital that a fund manager has yet to call against a commitment amount. Meketa updates unfunded balances for funds to reflect all information provided by fund managers provided in their cash flow notices. Some funds may be denominated in non-USD currencies, and such unfunded balances represent the fund's local currency unfunded balance translated to USD at the rate as of the date of this report.

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Meketa Investment Group has prepared this report on the basis of sources believed to be reliable. The data are based on matters as they are known as of the date of preparation of the report, and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available.

If we manage your assets on a discretionary basis, please contact us if there are any changes in your financial situation or investment objectives, or if you want to impose any reasonable restrictions on our management of your account or reasonably modify existing restrictions.

In general, the valuation numbers presented in this report are prepared by the custodian bank for listed securities, and by the fund manager or appropriate General Partner in the case of unlisted securities. The data used in the market comparison sections of this report are sourced from various databases. These data are continuously updated and are subject to change.

This report does not contain all the information necessary to fully evaluate the potential risks of any of the investments described herein. Because of inherent uncertainties involved in the valuations of investments that are not publicly traded, any estimated fair values shown in this report may differ significantly from the values that would have been used had a ready market for the underlying securities existed, and the differences could be material.

This document may contain certain forward-looking statements, forecasts, estimates, projections, and opinions ("Forward Statements"). No representation is made or will be made that any Forward Statements will be achieved or will prove to be correct. A number of factors, in addition to any risk factors stated in this material, could cause actual future results to vary materially from the Forward Statements. No representation is given that the assumptions disclosed in this document upon which Forward Statements may be based are reasonable. There can be no assurance that the investment strategy or objective of any fund or investment will be achieved, or that the client will receive a return of the amount invested.

In some cases Meketa Investment Group assists the client in handling capital calls or asset transfers among investment managers. In these cases we do not make any representations as to the managers' use of the funds, but do confirm that the capital called or transferred is within the amounts authorized by the client.

Because there is no readily accessible market for private markets assets (companies and partnerships), the values placed on private markets assets are calculated by General Partners using conservative and industry standard pricing procedures. Annually, an independent auditor reviews the pricing procedures employed by the General Partner of each partnership.

The values of companies and partnerships are audited at year-end, and are not audited at other quarter-end periods. While financial information may be audited, there is some discretion as to the method employed to price private companies and, therefore, private markets partnerships. At all times, Meketa Investment Group expects General Partners to utilize conservative and industry standard pricing procedures, and requires the General Partners to disclose those procedures in their reports. However, because of the inherent uncertainty of valuation, these estimated values may differ from the values that would be used if a ready market for the investments existed, and the differences could be significant.